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AND

POLITE LITERATURE.

Agriculture and the Mechanic Arts are the basis of Civilization.

M. TARVER & H. COBB,

EDITORS & PROPRIETORS.

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THE

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VOL. VIII. April, 1852. No. I.

ARTICLE I.

Aspects of Civilization.

Written history and the ruins of cities, temples, and tombs are the repositories of the more ancient nations of the earth.

The regions of early civilization have become, for the most part, a desert. And the people by whom they are now inhabited, may be regarded as fragments of mighty nations, gradually declining into a state of barbarism.

The valley of the Nile, the birthplace and grave of many arts unknown to other nations; the cradle of science—practical, profound, and mysterious—is strewed with ruins which excite the admiration of mankind. While the condition of the imbecile Copt, reputed descendant of the race that made Egypt a city and a garden, corresponds to the barrenness of a land once overflowing with fruitfulness and the dilapidation of cities crowded with wealth and intelligence. Here, the monuments of ancient art, the dust of the dead, and the rights of the living are spurned and trampled under foot by the despotic Turk and remorseless Mamlouk. The rich pastures of Goshen, the land of Rameses, where fed the flocks and herds of Jacob and his sons, is now a sterile desert. No green meadows bedecked with dew drops, glowing like diamonds in the morning rays, adorn the land assigned by Pharaoh to Israel and his offspring. Herbless and treeless, the inhospitable plain lies desolate, scorched by the rays of a burning sun.

The once fruitful region watered by the Euphrates and Tigris, where, under the influence of the learned Magi, civilization reached a degree of splendor never attained perhaps in any other land, is now the abode of semi-barbarians, destitute of the more useful arts

which characterise a civilized people. A race almost as ignorant of the history relating to the ruins over which they roam, as are the American Indians of the people who constructed the ancient mounds of our continent.

The social and moral aspects of the people inhabiting the entire region from the Indus to the Levant present a striking resemblance to the ruins of art, which lie scattered over its exhausted soil. And fragments of political power that bound many nations together in the support of a single dynasty, are everywhere recognized in the despotic rule of petty chiefs, tyrants, destitute of all the virtues and accomplishments necessary to render obedience tolerable and the subject respectable in his own estimation. Nor, did those great systems of religion, taught by Zoroaster and Moses, escape the common destiny of the land. Of their mutilated and disjointed fragments enough, however, were preserved to supply Mahomet with materials for the Coran, now the religious text-book of the people who possess the land, where the Jewish and Christian dispensations were first promulgated.

Even the mental powers of the people, like all things else in this region, have fallen into decay. In harmony with the desolation that pervades the land, its inhabitants seem to be incapable of conceiving the means of improvement. And hence, no great design calculated to advance or ameliorate their condition can ever be projected or carried out by the present races.

And although many elements of civilization yet remain in the land, they have lost their vitality; and we conclude that, like our own continent when discovered by Columbus, Asia can only be redeemed from a state of barbarism by the introduction of a new race.

The elements combined in the ancient systems of civilization were potent in the development of powerful and splendid empires. But these empires were, in their nature, unjust and despotic. Anterior to the art of printing, learning was, of necessity, confined to the rich and privileged orders, and consequently the unenlightened masses were controlled by the combined power of the secular rulers and priesthood, who enjoyed all the fruits of civilization, while the great body of the people bore its burthens. No form of government could be more favorable for the encouragement of the arts which embellish metropolitan cities and minister to the luxurious apetites of the rich; but none could be more opposed to improvements

calculated to ameliorate the condition of the poor. It was impossible that such a system of civilization could exist through an indefinite period. For a time must arrive in all countries subjected to cultivation, when their products cannot be increased without the aid of science. And when that point shall have been reached, unless additional knowledge be brought to the assistance of labor, war becomes a national necessity, and whether it results in defeat, or in the conquest of additional territory, it nevertheless tends to avert the horrors of famine, at least, for a season.

War, however, is but a temporary expedient. For it is an eternal and unalterable principle in the laws of natural and political economy that, in a community where the majority of laborers receive no other reward than sustenance sufficient to keep them in a working condition, the increase of numbers must, in time, exceed the capacity of the country to sustain its population. From that point of time may be dated the decline of nations. Acquisition of territory, increase of manufactures and the extension of commerce may sustain and bear a nation onward in apparent prosperity, perhaps, for many generations. But, in time, the acquired territory becomes peopled to excess, or its population rebels; other nations become rivals in manufactures and commerce; and the crisis deferred, perhaps, for centuries, at length arrives, when, like a decayed building, the nation suddenly falls with the props which sustained it.

The ancient civilization of Europe, though differing in its aspects from that of Asia, was, nevertheless, composed of similar elements, and was, consequently, liable to decay from similar causes. Declining with the Roman empire, which had been long sustained by conquest, it was superseded by the advent of a race fresh from the forests of the North; a people possessing all the vigor, independence and self-reliance which characterize man in the Hunter state; a race of men totally unacquainted with the philosophy, religion, and political science of ancient civilization.

The Fall of Rome constitutes an important era in the world's history. It may be regarded as the closing scene of the great drama of ancient civilization. A dark age ensued. It was but natural, that darkness should have been occasioned by the extinguishment of those great lights which had so long illumined the mental and moral world. The opposing elements of ancient mythologies, Grecian and Roman philosophy, Christianity and Gothic supersti-

tions bewildered the human mind, and seemed to threaten, for a season, the destruction of the race. But the great element which was designed to vitalize the new and more exalted system of civilzation, prevailed.

The Goth became a Christian: Christianity became the religion of Europe. At a time when the Church and State were weak and struggling for existence, it was natural that an alliance should have been formed between them. And when all were poor, and but few enlightened by learning, it was reasonable that those who devoted themselves to the acquisition of useful knowledge for the benefit of all, should be supported by the labor of others. Hence, in theory, modern civilization commenced its career upon principles which appear natural and just. The feudal system, the union of Church and State, and the power claimed by the Pope to control all the goverments of Christendom, constitute the prominent aspects presented by modern civilization in some of its earlier stages.

Though these combinations might have been necessary and just in the beginning, yet, it is evident that modern civilization could not have progressed beyond the degrees attained by the ancient systems without modifying the forms of its early institutions. It is true that modifications have been made; but there is just reason to apprehend that in most cases they have been too long deferred.

In many parts of Europe pauperism has become a serious burden, and, like a plague spot, it must continue to spread until it destroys the vital energies of those nations among whom it is found to exist, unless a remedy can be applied which will effect a radical cure. In France, revolution, that desperate remedy of a suffering and declining people, has been resorted to; and every form of government which human ingenuity could devise, has been tried by the French people; but France has not been invigorated. A change in the form of Government brings no change calculated to ameliorate the condition of its constituents, where a majority of the people constituting a nation, are uneducated and destitute of property. In such cases a sudden change from a monarchy to a democracy could scarcely fail to result in anarchy. For when the power, which had been exercised by wealth and intelligence perhaps for centuries, falls into the hands of those who have borne the burthens of civilization, without enjoying its ad-

vantages, confiscation and division of property follow as natural consequences.

And, were it possible that a division of property could be effected without violence, yet few would profit by such a measure. The wealth of the nation would be squandered rather than improved; and but little time would elapse, before it would be transferred from the possession of the idle and ignorant to the hands of the industrious and intelligent. Nor could political power be long retained by an ignorant majority; for it is an eternal and immutable truth, that intelligence governs not only the Universe, but controls also the moral, social and political condition of man. Consequently, order can never be established under any form of government that violates this universal principle.

The present aspects of European civilization are interesting in the highest degree. The southern part of the Continent, including the peninsula of Spain, is under the influence of religious institutions, which have inculcated the principles of conservatism in religion and government until symptoms of national decay have become evident, and would seem to demand the application of a speedy remedy. While Russia, in the north, governed by an Autocrat, presents the aspect of a young and vigorous people, possessing natural resources sufficient to sustain a rapid increase of population for many generations. And if we look to the natural laws that control the destinies of nations, rather than to the partial and abortive efforts which have been frequently made in different parts of Europe to establish civil liberty, we can scarcely resist the conclusion, painful though it be, that the principles of political despotism are gaining strength, and that the Russian type of civilization is likely to prevail throughout the Continent.

Germany and Hungary possess many elements of a free and vigorous people; and these nations occupy a geographical position which would enable them to exert a mighty influence upon the civilization of Europe, provided they were free and capable of sustaining institutions similar to our own. But as long as Russia is willing to assist the German sovereigns in suppressing revolutionary movements, it is scarcely possible that the people of those nations can establish and maintain republican governments. Besides, the spirit of reform is much weakened in Germany by emigration to this country. The lovers of liberty—the bold and enterprising spirits who could do most towards its achievement at home,—

emigrate to a land where civil and religious liberty have already been established upon firm foundations, rather than spend their lives and fortunes in a doubtful struggle. Hence, it is obvious that emigration is calculated to conserve and strengthen the despotic principles of European governments, by drawing off that class of their subjects most strongly opposed to despotism.

The destinies of Great Britain were separated by the Reformation from those of the nations on the continent, and hence she presents many aspects of civilization peculiar to herself. Her Colonial system, in connection with commerce, by enlarging her natural resources, has fostered a spirit of progress, and imparted to her people many qualities which belong to a young and growing nation; while the conservative principles of her ancient institutions give a degree of consistency to her councils, and steadiness to her policy, that sustain her institutions and cause her power to be respected in every quarter of the Globe. Unlike continental Europe, the genius of the people and institutions of Great Britain tend to the enlargement of civil and religious liberty. And although the parent state still suffers under many evils derived from the feudal system, yet these are chiefly local in their nature, and do not follow the colonists to other lands. Hence, Great Britain may be regarded as the more immediate source of republican principles and the parent of a new order of civilization. The affinities between Great Britain and Continental Europe are gradually growing weaker; and if the latter should even become Cossack, yet the destiny of the former would not be materially affected by the change; she would still progress, as heretofore, in her great mission of introducing a new order of civilization in distant parts of the earth.

While contemplating the different aspects presented by civilization from the earliest ages to the present time, we are forcibly impressed with the analogy between the manner, in which the diferent orders of animated nature succeeded each other in the history of the earth, to that exhibited by man in his social progress.

We are taught by Geology that many successive orders of animals, now extinct, have existed in different ages of our globe, each advancing in degrees of development from the lowest and most simple forms of life, until the appearance of man upon the earth, a being endowed with faculties which enable him to comprehend the laws of his own nature; with power to multiply and en-

large the means of his subsistence; capable of intellectual and moral pleasures; and of improving, indefinitely, his faculties of enjoyment. And so, in tracing the history of civilization, we discover successive orders gradually arising from the chaotic elements of ignorance and barbarism, until we behold the beautiful and sublime development of our own American system. An order of civilization founded upon principles of universal justice; harmonizing and combining human science with the lights of revelation; diffusing knowledge and political power among the people of every degree, and calling into active and efficient operation the mental and moral qualities of every individual. And thus combining all the elements of progression, like the Christian philosophy, it is consistent with the highest development of humanity. Its chief elements are imperishable. And therefore, although in its progress it may present a great variety of aspects, yet we are compelled to conclude that it must be coexistent with the race of man. It is an off-shoot of British liberty, which must have perished with the parent tree had it not been transferred to the virgin soil of our continent. It possesses all the attributes of a new order, and it may be safely affirmed that the physical and social elements of Europe are incapable of producing another, similar in form, and possessing the same inherent and vital properties.

It cannot originate in other lands; yet, with judicious culture, it thrives wheresoever transplanted.

Even the African born upon our soil, though bred in bondage, when transferred to the tropical clime of his fatherland, carries with him the vital elements and energies of American civilization. A few thousand colonists, transported to Liberia by the praiseworthy exertions of American philanthropists, have already established there an order of civilization, and a form of government modelled in all respects after our own; while the French nation after a struggle of three score years has again declined into a state of despotism. No foreign hand was stretched forth to suppress the spirit of civil liberty in France or to sustain the rule of despotism. France was left to fight her own battles, and has fallen by her own hand. Under every form of government through which she passed, she has been powerful and respected abroad; but all her experimental forms of government were inconsistent with the genius and national elements of the French people, and consequently failed to secure the ends designed by their projectors.

With such an example before us, and in view of the aspects of European civilization, and of the elements of which it is composed, who will risk his reputation for intelligence so far as to affirm that civil liberty could be established and permanently maintained in patriotic Hungary, even if Austria were to consent to her independence? We need not discuss the principles or policy of intervention on the part of this country in behalf of Hungary or other European nations. The idea was the offspring of American sympathy, excited to a high degree by the visit to our shores of the acknowledged chief of Hungarian patriots, and claims our notice, mainly, because of the evidence it affords that the love of civil liberty is a natural and cherished sentiment of the American people.

That they should sympathize with Hungary was natural; and we are bound to respect their public demonstrations of regard for the cause of a people struggling for independence. But the doctrine of intervention is directly opposed to the genius, principles and policy of our American institutions. It will pass away with the occasion that gave it birth.

In reviewing the subject of this paper, we find that the area of civilization was not materially enlarged from the time of Alexander the Great to the discovery of this continent. As it progressed westward, it declined in the East; and decay pressing hard upon its rear, no successful attempt has yet been made to re-establish civilization upon the ruins of a country once inhabited and despoiled by the ignorance and crimes of its own people. The land exhausted of its fertility, if not replenished by the hand of science, must have its sabbath of rest, and remain fallow, until the advancing column of civilization shall have made the circuit of the globe. The laws of nature are immutable.

The aspects of Asiatic and European civilization present a gloomy view of humanity, but they are inscribed with lessons of profound instruction. To the statesman they teach the importance of equal rights, of universal education, and admonish him against the folly and danger of interfering with the quarrels or policy of foreign nations. To the teachers of philosophy and religion they show, that, though founded upon eternal truths, yet, without progress, their systems must decay and loose their vitality. And they proclaim to the tillers of the soil that to their hands have been confided the life-sustaining elements of nations, and, that a

fearful accountability awaits the individual who deprives the earth of its vitality, robs it of its treasures, and makes a desert spot, where he should have made a garden.

ARTICLE II.

Population of the United States.

Sixty years have elapsed since the first census of the people of the United States was taken, and it is very gratifying to find that, in that period—from 1790 to 1850 inclusive—our population has increased from 3,929,827 to 23,257,723, thus showing an advance in population, never before experienced by any nation or people, of which a record has come down to our times. It is very gratifying to reflect that the power, prosperity and improvement of the United States have advanced with a rapidity and energy even exceeding our increase of population. And it is a source of great pleasure, that that advancement, there is just reason to believe, will probably progress with accelerated force, particularly in knowledge, and the general education of the people at large.

As population is the ground work of all improvement, it has struck me, in my contemplations on this fruitful and interesting subject, that a tabular exhibition of our population, for the past sixty years, showing its regular increase, during each term of ten years, with such a steady and nearly uniform course, as to put it in our power to calculate, after each census, not only what will be the result of the next census, but of each year of the decade, would not only be interesting but very useful. Such a table will enable us to ascertain with sufficient accuracy, for all useful purposes, at the end of any year of the decade, the actual population, at that time, as well as of the succeeding census. Any small errors will be corrected by the actual census, at the end of each ten years, which will furnish correct *data* for calculating the next census and so on in perpetuity.

In the annexed table the first column will show the *estimated* population of 1800 by adding to the *actual* population of 1790 one third, or 33⅓ per cent. The second column shows the *actual* population, according to the census; and the third the number, more or less, which the *actual* shall vary from the *estimated* population. The same course will be pursued, after each census, till the year 1850 inclusive.

In a second table I will show the results of our population, after each ten years for sixty years to come; and how the population after each year of the decade may be nearly ascertained. But I

will postpone this table till I introduce and make some explanatory remarks on the first.

	Estimated.	Actual popul.	Population more or less than estimate.	
1790	.....	3,929,326		
1800	5,239,101	5,303,666	More than estimated.	64,565
1810	7,071,555	7,239,903	More than estimated.	168,348
1820	9,653,204	9,660,765	More than estimated.	7,561
1830	12,881,020	12,866,020	Less than estimated.	15,000
1840	17,181,360	17,068,666	Less than estimated.	112,694
1850	22,758,221	23,257,723	More than estimated.	499.502*

It will be seen by the foregoing table, that the *actual* population exceeded the *estimate* by the census of 1800, 1810 and 1820 in the aggregate 240,474, and fell short of the estimate, by the census of 1830 and 1840, 127,694, making the aggregate excess of population, in fifty years over the estimate of 33⅓ per cent. only 112,780, *error* averaging 2255 per annum.

But by the census of 1850 the *actual* population exceeded the *estimate* of 33⅓ per cent. 499,502. The cause of this excess will appear from the following facts collected from a table, in the July number of the Western Journal, for 1851, p. 241. From that table it appears that the number of emigrants from Great Britain and Ireland, from the year 1825 to 1849 inclusive, was 1,260,-247. The number for the first fifteen years was 348,120, averaging for the decennial period of ten years 232,080. For the ten years 1840 to 1849 the number was 679,120, showing an *excess* over the preceeding ten years of 447,040, which added to the estimate of 33⅓ per cent. to the census of 1840 would make the aggregate of the census of 1850—23,205,261. The *actual* number, according to the returns published in the Globe, was 23,257,723. This shows that the great excess over the estimate of 33⅓ per cent. during the last decade, was occasioned by the great increase of foreign emigration.

The average *annual number* of emigrants for the first fifteen years, in the table referred to, from 1825 to 1839 inclusive, was 23,208; and for the next ten years, from 1840 to 1849 inclusive, the average *annual* number of emigrants was 91,120. This exhibits a very great increase of emigration. But for the last three years, embraced by the table, from 1847 to 1849 inclusive, the number was 549,837, averaging per annum 183,279. At the same annual rate the number of emigrants for ten years, from 1850 to 1860, would amount to 1,832,279, whilst for the ten years, preceding 1840, the number was only 232,208, showing an increase of emigration during the next decade of 1,600,071. Upon the supposition that the emigration from 1850 to 1860 shall be equal to the average of the three years from 1847 to 1849 inclusive, this

* For census to 1840 inclusive, see National Register, vol. 61, p. 113.

number should be added to the 33⅓ per cent. upon the census of 1850, which would give the census of 1860 as follows:

Actual census of 1850,	23,257,723
33⅓ per cent. thereon,	7,752,574
Census of 1860 by adding 33⅓ per cent.	31,010,297
Add for increased emigration	1,600,071
	32,610,368

In consequence of the great increase of emigration from Germany and other countries, we may safely assume that the average number of emigrants from all countries for the ten years from 1850 to 1860 will be at least as great as the average for the three years from 1847 to 1849 inclusive. This would give the actual population of 1860, 32,610,368. *Forty* per cent. upon the actual census of 1850 would give for the census of 1860, 32,560,892, which is nearly fifty thousand *less* than the number given by the foregoing estimate.

From the foregoing statements and facts, I think we may safely assume, that our population, aided by emigration, will, for the sixty years, from 1850 to 1910, increase, at the rate of forty per cent. for each ten years. The annexed table will give that increase.

1850,	Population,			23,257,723
1860,	Estimate at 40 per cent. increase,			32,560,812
1870,	do.	do.	do.	45,585,137
1880,	do.	do.	do.	63,819,192
1890,	do.	do.	do.	89,346,869
1900,	do.	do.	do.	125,085,616
1910,	do.	do.	do.	175,519,862

The *increase* of our population from 1790 to the year 1850—sixty years—was 19,328,379. The *increase* during the next sixty years will be, according to the foregoing estimate, 151,862,139, more than seven times as great. Such will be the mighty progress of our population.

The following table will show our *annual* population from 1850 to 1860, upon the supposition that the increase will be equal to three and four tenths per annum, at a compound ratio. It will be seen from the table, that the aggregate for the ten years will be *less* than the estimated population above, by 118,663, being an *annual* variation from that estimate of 11,866, an error of very little importance.

1850,	Population,	23,257,723	1856,	Estimated,	28,424,339
1851,	Estimated	24,048,485	1857,	"	29,390,766
1852,	"	24.866,133	1858,	"	30,390,052
1853,	"	25,711,581	1859,	"	31,423,313
1854,	"	26,585,774	1860,	"	32,610,368
1855,	"	27,489,690			

After each census a table, upon the above principles, may be framed for the succeeding ten years, taking the *actual number* by the census as the basis of the calculation.

The rapid increase of our population hitherto, and a reasonable estimate of its increase for the time to come will afford some very interesting topics for reflection. To go at large into this subject, would extend this essay to too great a length. I will indulge only in a few remarks on two or three subjects of great interest.

1. If we cast our eyes over the table, giving our population for sixty years, from the year 1850, we cannot fail to perceive that our resources, and strength, if we remain united as One people, will at no distant day become so great as to *convince all foreign powers*, that they cannot hope to interfere with our political concerns, with even the *slightest hope of success*. So long, then, as our Government is wisely administered — confining itself, in relation to political concerns, to our own affairs, firmly sustaining and carrying out our republican principles, and not interfering with the political concerns of other nations—we may confidently expect that wars with European nations may be wholly avoided. With the South American Republics there is still stronger ground to hope that no serious collision will arise. Here, then, is a glorious prospect, that the United States may take the lead, by her example and influence, in relieving the world from the scourge of war.

All history shows the horrible and disastrous effects, resulting from the nations of the earth warring with each other. Contemplate the picture given by the celebrated Victor Hugo of *one* of the consequences of European wars. He estimates the *annual* cost of maintaining the *standing armies* of Europe at five hundred millions of dollars. The additional expenditures in preparing for and actually carrying on war, would probably amount to as much more. Here we have an *average annual* expenditure of one thousand millions of dollars for war purposes. But this vast expenditure of money arising from nations warring with each other, is nothing in comparison with the devastations and horrors of war; one of which is the sacrifice of untold millions of human beings, suddenly plunged into eternity, to meet a just and righteous God. (See note at the end of this essay.)

What an immense expenditure of blood and treasure, all which might be saved, if nations had the wisdom "to learn war no more." One of the blessed effects, resulting from the cessation of wars among men, continues Hugo, would be the spread of civilization and Christianity throughout the habitable globe so that "Christendom would mean the world."

In another point of view, what would not the saving of such immense resources enable all nations, and ours in particular, to do, in the way of improving their respective countries, and educating all classes of their children and, at the same time greatly reducing the burthen of taxation?

2. The next subject, upon which I would offer a few reflections is the vastly increased emigration from Europe. From the table already referred to, it appears that the actual number of emigrants from Great Britain and Ireland, in the year 1849, was 219,450. Adding one fourth of this number for emigrants from all other countries, would give for the year 1849, 274,312. At this rate, for ten years, the number of emigrants would be 2,743,120. As it is known, from information derived through newspapers, that the number of emigrants, who arrived at New York, in the years 1850 and 1851, average annually considerably more than those, who arrived at the same port in 1849, it may be safely estimated that the whole emigration for ten years from 1851 to 1860 inclusive, will not fall short of three millions. This rapid introduction of foreigners into our country, who, after a short probation, will be entitled to the right of suffrage, renders it extremely important that their offspring should be properly trained and educated, in order to qualify them for the important duty they will have to perform as citizens of our free Republic.

This consideration furnishes an additional motive for urging the introduction and efficient management of common school education in every State of the Union.

3. A third reflection I would make upon our rapidly increasing population—both native and foreign—is that the period is not far distant, when our *interests* will be greatly promoted by a separation of the black from the white population, and a colonization of them in Liberia. Experience proves that the Blacks will ever be held in a state of degradation by the Whites. Even when *freed* they will form a distinct class from the Whites, and a state of unfriendly feeling and hostility will prevail between them, which will lead to a system of petty depredations, committed by the Blacks upon the Whites, that will be found exceedingly troublesome. Besides the black population, even when free, can never have the benefit of a good education, except by becoming colonists in Liberia. The rapid increase of the white population will render the *separation* more and more *necessary*; and it cannot be doubted that the Free States will soon find it *necessary* for the promotion of their own interests to adopt the most efficient and energetic means of colonizing their free Blacks in Liberia.

In the slave-holding States, a system of gradual *voluntary* emancipation is going on more rapidly than the emancipated people of color can be colonized in Liberia, through the aid of the Colonization Society. As some of the slave-holding States have already adopted the principle, and others will soon follow the example, of allowing *voluntary* emancipation *only upon the condition* that the slaves emancipated shall leave the State, and as some of the free States have already prohibited the introduction of free Blacks, and others will probably follow the example, there

will be a check to voluntary emancipation, unless the *means* of the colonization society shall be *greatly increased.* To increase these means as much as possible, should be the object of *all the friends of emancipation.* But to attempt to *enforce emancipation* upon the Slave holding States, would not only be *unjust,* but would be *utterly fruitless.* It would throw great obstructions in the way of *voluntary* emancipation, and prolong the period when the public mind will be prepared, in the several States, to provide for a system of gradual emancipation by constitutional provision.

Such a system, whenever it is adopted in any State, will be accompanied *with the condition that the emancipated slaves shall leave the State.* Let the friends of emancipation keep this constantly in view, and they cannot help seeing that the only way in which they can do good to the enslaved African, is *by providing the means of sending them to their native Home.* The colonization of our free Blacks in Liberia, will, with the blessing of God, be the means of spreading civilization and Christianity throughout all Africa. Who will not be willing to contribute something to bring about such a great and God-like work of Christian benevolence?

Our rapidly increasing white population, and the still more rapid increase of our resources, will, at no distant day, enable the citizens of the several States to colonize all the free Blacks, now within their borders. In the mean time *voluntary emancipation* aided and encouraged by the benevolent efforts of the Colonization Society, will keep in check the black population of the South, and pave the way for a system of gradual emancipation, coupled with colonization, *by the free and voluntary consent of the Slave-holding States.* To accomplish this good work, the people of the South must contribute the *value* of their Slaves, thus emancipated by them. And will not our northern Brethern freely and liberally contribute towards colonizing them, on the coast of Africa, as fast as they shall be voluntarily emancipated by the southern Slave-holders? They should recollect that *their* ancestors contributed largely to the introduction of slaves, in the southern States; and that the people of those States paid a full and valuable consideration for the slaves thus introduced.

In this good work a great benefit will result to the *whole Union,* and all ought to contribute freely and liberally towards its accomplishment. It is truly a benevolent and Christian work, and ought, in particular, to engage the sympathies of every Christian.

The system of colonization in Africa, will not only free us from a great evil, but will lay the foundation for introducing and greatly extending our glorious republican institutions over the continent of Africa. Liberia has already adopted our republican system, and, as a nation, she is destined to grow, with the aid of our col-

onization scheme, even with greater rapidity than the United States have arisen to their present population and power.

As a *specimen* of the extreme degradation of Africa, I give the following facts from Dr. Rees's New Cyclopaedia, vol. II., part 2d, article Dahomay.

"This kingdom is situated North of the slave-coast, 60 or 70 miles from the Atlantic, and extends to an unknown distance in the interior. It was subdued early in the 17th century by a bloodthirsty and cruel conqueror, who ripped open the belly of the former king, called Da, and placed the body under the foundation of a palace, which he built and called Dahomay, because it was built "*in the belly of his victim*," that being the signification of the term in his native language. Hence was derived the name of his kingdom, Dahomay.

He was succeeded in 1732 by his son, Bassa Ahadee. One of the first edicts of the new king was that every man of the name of Bassa throughout his dominions, should be put to death, because it was *an insult to majesty*, that any of his subjects should bear his name." During the long reign of this cruel and ferocious tyrant, Bassa Ahadee, the country was harassed and wasted by wars, foreign and domestic, in which multitudes were slain; but nothing fills the mind with so much horror as the sacrifice of human victims for the purpose of watering the graves of the deceased royal family."

It was a custom of the kings of this country to ornament the walls of their palaces, and other public buildings, with the skulls and bones of the unfortunate victims of their cruelty. During the reign of the successor of Bossa Ahadee, after the slaughter of the prisoners whom he had taken in war, their skulls were ordered to be applied to the decoration of the royal walls. On one occasion, a calculation having been made, that 127 skulls were wanting for the completion of this horrid embellishment, the prisons were thrown open, and the requisite number of victims were dragged forth and inhumanly butchered, in order that the deficient number of skulls might be supplied.

"The Dahoman government is the most perfect despotism that exists perhaps on the face of the earth." The tyrant can, at his pleasure, call forth not only every male of suitable age, but even females also, to take part in his wars. Disobedience is punished with death. Their support, in time of war, depends chiefly on the plunder of the nations with whom the war is waged.

There is "no subordination between king and slave." Even the prime minister, when he approaches his tyrannical master, "is obliged to prostrate himself with as much abject submission as the meanest subject, all acknowledging the right of the sovereign to dispose of their persons and property at pleasure." No one is allowed to sit in his presence (except women), all must lie prostrate. The prime minister can approach the king's palace only

crawling upon his hands and knees. Beyond the precincts of the king's palace, his ministers require and receive from *their inferiors* a servility almost as great as the king requires from them.

Captives taken in war, whose skulls are not appropriated to ornament the walls of the king's palaces and interior apartments, and other public erections, are sold in the public market for the king's benefit; and thus find their way to the slave coast, and are traded off to the inhuman traffickers in African slaves.

This is a specimen of the cruel despotism which prevails in this country; and yet it is said to be somewhat advanced towards a state of civilization. They receive strangers with remarkable courtesy. They cultivate the earth for a subsistence, and raise and manufacture cotton, on looms of their own construction, for clothing. Their cooking is described as remarkably good. Their bread, of Indian corn and millet, is well prepared and finely baked. Their black soup, seasoned with pepper, salt, and palm-oil, and which has a fine flavour given to it by the seeds of a tree, called wild tamarinds, is described as very fine.

Their capital, Dahomay, lies in N. L. 9° 50′, and is, therefore, not very distant from Liberia. May we not reasonably hope that the inestimable advantages of civilization and Christianity will, with the blessing of God, be extended, through the instrumentality of the rising Republic of Liberia, at no distant day, over the kingdom of Dahomay, and all the surrounding nations? This would be conferring upon them an inestimable benefit which we can greatly aid in accomplishing by contributing towards the growth and prosperity of Liberia. ADAM BEATTY.

NOTE.

The destructive ravages and horrors of the wars carried on by the four great empires, the Babylonian, the Medes and Persian, the Macedonian and the Roman, were terrible beyond description.

According to Josephus, more than a million of Jews perished in the city of Jerusalem in their war with the Romans, which was terminated by the taking and destruction of their chief city, besides 250,000 in the provinces, and 97,000 sold or carried away as slaves. Great numbers moreover perished by pestilence and famine. Forty or fifty years afterwards, the Jews, in an insurrection, destroyed 450,000 of their enemies; but were again subdued by the Romans, with an immense destruction of life and property. In another insurrection, not long after, the Jews sustained a loss of 580,000, besides the destruction of one thousand of their towns and fortresses. Such were the destructive ravages of the Roman conquerors in their wars with the Jews *alone*, to say nothing of their other innumerable wars. But in process of time they suffered as severely by the ravages of other nations. Towards the close of their empire in the West, they were invaded by the Visigoths, under Alaric, and other Barbarian nations, commanded by Genserich, Odoacer, Attila and others, who inflicted upon them severe vengeance for the wrongs they had done to others. About the year 477, the Roman empire in the West was completely subverted by Odoacer, who, sixteen years afterwards, was overthrown and killed by Theodoric; who, in 493, founded the kingdom of the Ostrogoths upon the ruins of the Roman empire, in the West.

History is full of the dreadful ravages of the Babylonians upon the surrounding nations, and particularly the Jews. Like the Romans they in turn were scourged in the most dreadful manner, by the Medes and Persians. In the glowing and prophetic language of Isaiah, describing the invasion of these conquerers, he says:

"every one that is found shall be thrust through, and every one that is joined unto them (the Babylonians) shall fall by the sword. Their children also shall be dashed to pieces before their eyes; their houses shall be spoiled, and their wives ravished." Their great city Babylon was to be *utterly laid waste*, so that it should become the habitation "of wild beasts of the desert." (Isaiah, chap. 13.) This prophecy was fulfilled two hundred years afterwards. Babylon was totally subverted by the Medes and Persians, under Cyrus, who inflicted upon the Babylonians ample vengeance for the wrongs they had inflicted on the Jews and other nations.

Cyrus was, comparatively, a humane conqueror, but his successors were as cruel and barbarous as the Babylonians had been. About the year 331 B. C. they were completely overthrown by Alexander the Great, the Persian empire having continued but a little over two hundred years from the Fall of Babylon. The successors of Alexander were in turn overthrown and conquered by the Romans, after a still shorter reign. In all these wars carried on in the true spirit of the times, the cruel ravages and horrid devastations were indescribably great; and countless millions of human beings were sacrificed. If we come down to modern times, we find the propensity to wage wars among nations, nearly as great as ever. Napoleon Bonaparte, not content with ravaging nearly all the surrounding nations of Europe, pushed his military operations into two other quarters of the Globe, Asia and Africa, conquering Egypt and the Holy Land.

England was secured from invasion by her insular situation and great naval power; but Russia was not too distant, as he supposed, to carry his conquering arms into her borders. Here he at length met with successful resistance. After many severe and hard-fought battles, he was compelled to make good his retreat to France, where he was finally overthrown, and banished to the Isle of Elba. From whence, some years after, he returned to France, and made prodigious efforts to recover his lost power, but in the great battle of Waterloo he was again overthrown, and sent a prisoner to the Island of St. Helena, where he died.

It has been estimated that this war with Russia alone caused the destruction of more than a million of men.

These cruel devastations are not to continue forever. We have the assurance of prophecy, that the time will come when men "shall beat their swords into ploughshares, and their spears into pruning-hooks; nations shall not lift up sword against nation, neither shall they learn war any more." Isaiah, II. 4.

Two circumstances have occurred recently, which go to show that differences among nations, by a wise, temperate and prudent course may be adjusted without resorting to war. I refer to the prompt, efficient and honorable measures adopted by our President to make reparation for the violent outrages, practised by a mob at New Orleans, against the Spanish consul, at that place; and to the more recent and honorable reparation made by Great Britain for an unjustifiable attack of one of her public vessels, on a merchant vessel of the United States. The letter of Lord Granville, the Secretary for foreign affairs, to our Minister at London, is highly honorable to him and his Government. It makes the most ample and honorable reparation for the wrong done, and will be an example for adjusting all differences of this kind in a friendly way. These instances, proceeding from two of the most powerful and enlightened nations, greatly strenghten the belief that the fulfillment of the prediction of the holy prophet, quoted above, may be looked for at no very distant period.

Article III.

Henderson and Nashville Railroad.

A glance at the map of the United States, in connection with the great lines of Railroads projected, all trying to secure the commerce of the great Agricultural staples of the valley of the Mississippi, and particularly of the Wabash valley, will show that

the position of Henderson is only cut off from the Gulf of Mexico and the Atlantic seaboard at Charleston, South Carolina, and Augusta and Savanna, Georgia, for the want of a connection with Nashville, Tennessee, a computed distance of 130 miles, through a country highly agricultural; the first 75 miles of which the soil is a sandy loam, partly barrens, and the substrata sand stone, overlaying in this whole distance a coal-field, the workable vein 4½ feet thick; growth of timber mostly post and white oak, the residue of the distance, 55 miles, is lime-stone; clay soil, partly barrens, and the residue oak, bordering the division between the Cumberland and Green river, but exceedingly fertile in all the agricultural products of corn, tobacco, oats, &c. An estimation of the whole line, compared with other lines of Railroads, indicates that this road can be built and fitted out complete for $1,625,000, or say $12,500 per mile. The timber, ballasting and stones for the bridges and culverts will be abundant, except on the 15 miles next Henderson, and here open viaducts can be built to last say 10 years, in the mean time stone and gravel can be transported on the road to render it complete and substantial. The grades need not exceed 35 feet per mile, and no curves need be less than 5730 feet radius; no heavy bridges required, as all the streams are small, and generally crossed at right angles to their axes.

Shall it be said of the citizens of Henderson county, with a taxable property of $4,759,442, that they cannot raise $100,000 by individual subscription, and of Hopkins, with taxable property of $2,318,174, that they cannot raise $50,000, and of Christian, with $6,158,666, that they cannot raise $150,000? Can Todd and Logan remain idle spectators in this great work? Will the citizens of these three great counties proclaim to the whole South, and particularly to Tennessee, Georgia, both Floridas and South Carolina, that they will not bear taxation of half a per cent., the amounts paid to be held as stock for ten years, yielding $661,-181,41, and secure this great connecting link in the chain? But secure the first sums, organize the company, and procure the services of a competent agent to visit Charleston, Savanna, Nashville, &c., and all those cities will aid you.

The State of Georgia has now a connection with Chatenooga, Tennessee, by continuous railroad, 423½ miles, passing Macon and Atlanta, and from Chatenooga to Nashville, 154 miles 1100 feet. This line passes through a tunnel in the Cumberland mountain, and through Winchester, where the great chain of Mobile, Montgomery and Memphis, Tennessee, railroad have their depot. The railroad from Charleston intersects the Georgia railroad at Macon, and the road is used from thence to Nashville by both lines. The distance from Nashville to Charleston is 591½ miles. From Winchester to Mobile and Memphis, all the roads are in a forward state, and with this connection of 130 miles, the chain is

complete, or about 720 miles from Henderson to Charleston, which distance can readily be accomplished in the short space of 24 to 30 hours with ease. This being done, a new feature and line of commerce is formed that will change the trade from the States of Indiana, Illinois, Kentucky and Missouri, to the Atlantic sea-board at Charleston and Savannah, to both Floridas and Alabama, particularly to the northern portions of those States.

The Evansville and Illinois road is complete to Princeton, 27 miles, and has been surveyed and put under contract to Vincennes, where it will intersect the Ohio and Mississippi railroad from Cincinnati to St. Louis, and in a short period will be extended to Terre-Haute, where the connection will be complete with the northern Lakes, Indianapolis, New York, Boston, Philadelphia, and all the eastern cities. But this is not all. The Virginia and East Tennessee railroads will in less than two years be complete, and they connect from Knoxville with the South Carolina and Georgia railroad, and the connection with St. Louis connects with the great St. Louis and Pacific railroad, and hence all the North, West and the Territories.

How is this work to be accomplished?

Secure the services of the best and most substantial citizen you have; send him abroad, as the Cincinnati and St. Louis road sent Judge Ellis; the Chatenooga and Nashville sent Gov. Jones, the Frankfort and Louisville sent Thomas Smith, the St. Louis and Pacific Thomas Allen, Esq., and the Indiana roads from Madison to Terre-Haute have been pressed forward by the indomitable energy of O. Smith, Esq., and the Evansville and Illinois by Judge Hall These roads were all still until their special agents were appointed; and the road from Lexington to Maysville and from Louisville to Nashville, by the aid of L. S. Robinson, have both been started, and are being successfully carried on, and no doubt is entertained of the completion of all these works. The agent, in all cases, has been the moving machine to start all the above railroads. They have invariably called to their aid engineers of *high* reputation, who have made the surveys, profiles, estimates, and procured the right of way. These estimates have brought contractors of capital to engage in the construction of the work, and in most instances these contractors have taken the works at the estimates and from 25 to 33⅓ per cent, in stock.

These agents, in their visits, have had an opportunity of seeing the various railroads after they were put in use, and they have apprised themselves of the modus operandi of carrying them on. They have seldom failed to procure stock. In the case of the Nashville and Chatenooga road, Gov. Jones visited Charleston and Savannah; the city of Charleston subscribed $500,000, the Georgia Railroad and Banking Company $250,000, in the stock of that road; thereby showing the deep interest both the States

took in the connection with Nashville and the valley of the Ohio. But have they attained their object fully? The staples of Kentucky, Indiana, Illinois, and the West and Northwest are corn, wheat, pork, lard, bacon, flour and whiskey, and one other, not less in consequence, tobacco. The Wabash valley is traversed by the Wabash and Erie canal and by the Evansville and Illinois railroad, all concentrating in Evansville. This is the point these southern States must seek. There is no reason why those articles of consumption should pass the Gulf of Mexico, and then be reshipped from Charleston and Savannah, more than half way back to the points of production. Build this road, and the market is changed; it is fixed, it is certain. The farmers should do it.

Permit me to make an extract from the report of the Directors of the Nashville and Chatenooga road, as to probable profits and business: "The object of the friends of internal improvements in the South, one of vital importance to the whole section of the southern confederacy, in as much as it is one means of securing to the South a real permanent independence, is to effect a safe, certain and uninterrupted commerce between the valley of the Mississippi and the Atlantic."

"When our road is done, Charleston will be on the Cumberland, at a cost of $15,000,000, whilst the least cost of any railroad to the North or East will be $45,000,000, over mountains, lakes, ice and snow, and 300 miles greater distance."

"With these advantages the lines to Charleston &c., will command all the trade they choose or are able to carry, and the stock, consequently, must be profitable."

"It seems therefore evident that this line of improvement is destined to produce a radical change in the business transactions of the Union, giving, as it will, to the southern States the great carrying trade of the valley of the West, which has hitherto been monopolized by the northern lines of improvement."

"Then, if Charleston, Savannah, Mobile, North Georgia, South Carolina and Alabama, and particularly the two cities of Charleston and Savannah, as is at present indicated, assert their proper positions as commercial cities, and establish lines of Ocean steamers to and from the principal ports of Europe, the merchants and planters of the Mississippi valley need go no farther than the emporium of the South, to ship their produce, and receive their imported cargoes."

The mayor of Charleston visited and reviewed the Nashville and Chatenooga railroad, before the city subscribed the $500,000 stock. I take an extract from his report: "Upon examining the line of the road, it will be found that there is only 16 per cent. of curvation including the mountain location, and 90 per cent. is nearly straight."

"You may not be aware that from the Cumberland Gap, where

the mountain abuts on the Tennessee river, the crest of the mountain is entire and unbroken except at Montgomery's Gap, on the 91st section; the mountain has an elevation of 2000 feet above the sea except at this point, where a depression of 700 feet occurs and at this point the ridge is narrow enough to admit of a tunnel 2200 feet long, at an elevation of 1100 feet above the sea. This Gap then, in the Cumberland mountain, furnished the only opportunity to concentrate that elevation in a short distance, at no other point in the ridge is there a ridge of sufficient narrowness to admit of a tunnel."

"This road will be the first and, I presume, the only one which will cross the Cumberland mountain to tap the valley of the Mississippi."

These extracts will show the necessity of an agent of high character, after the organization of the company, surveys, estimates, report of directors, &c. And before the city of Charleston subscribed stock, they directed their Mayor to visit the road, examine its location, grades and capacity of trade. The Memphis and Charleston road, after organizing, surveying &c. sent to Nashville for Gov. Jones, at a salary of $5000, who had so signally aided by his zeal and eloquence in securing the Nashville and Chatenooga railroad, and he visited New Orleans and other cities on his mission. Here is an extract: "The question of building a railroad as a practical question, was a new one in this section of country, and yet, from this section has every dollar of subscription thus far come; no appeal has been made to Charleston &c., large and wealthy points, deeply interested in the work, or to the capitalists of northern Georgia and South Carolina, to whose system of railroads, *this road is absolutely essential*, (peculiarly applicable to the Henderson and Nashville,) or to foreign capitalist, who will undoubtedly find a fine opportunity for profitable investment."

"We understand that it is the intention of Gov. Jones immediately to visit New Orleans, and then Charleston, in the prosecution of his zealous labors, which have thus far so *signally advanced the prospects of the road*, in fact, more than anything else, have placed it at a point from which its completion is certain."

In securing the Ohio and Mississippi railroad, from Cincinnati to St. Louis, the *most scientific engineer* (Professor Mitchell,) was procured, and Judge Ellis of Vincennes, also as agent, was sent East with him. Their energy called the attention of the eastern contractors to the work. The whole line is given to an able and efficient company, who took one third the cost of the road in stock, the same in bonds, the private stock and the bonds of the railroad secured by mortgage, and the work is rapidly progressing.

The Pacific and St. Louis railroad procured an agent, Th's. Allen, Esq., who with a devoted energy caused an eminent engin-

eer to be selected, the surveys and estimates to be made, and the road is being rapidly made. I could cite twenty other similar cases, but not of such magnitude; but I think enough is said to show the absolute necessity of an able and eloquent agent, an organization of the company, the selection of a *known engineer of high reputation*; make the surveys and estimates, procure the right of way, stock, &c., and any amount that may be required, will be gotten. Since the first part of this communication was written, letters have been received in this place, and an able contractor recommended who with others, if the company will organize, proffers to build the road on good terms.

The country is good, population, materials for building, plenty; the travel will be large. This road can and ought to be,—nay, will be built. Let our sister counties and citizens rise in their strength, subscribe the stock required to organize, and let the work go ahead. Now is the time—procrastination may defeat the object. The whole line of road from Chatenooga to Savannah divides 12 per cent. after paying all the expenses.

Henderson, Ky. RAILROAD.

ARTICLE IV.

Strictures on Dr. Wayland's celebrated chapter on "PERSONAL LIBERTY."

MORAL SCIENCE, PAGES 208—214.*

Dr. Wayland is one of the intellectual giants of the age. No one questions that his mental powers are of the highest order, nor denies that he has risen to an enviable distinction as a writer on Ethics and Political Economy. But having no practical acquaintance with the institution of domestic slavery, it might be expected that he would make blunders in his Elements of Moral Science, and in his controversy with Dr. Fuller. So high does he stand in the world of Letters, that it may savor of presumption, in an ordinary man, to attack his sentiment, or question the logical acumen exhibited in his reasoning. It may however be rendered apparent, that, in order to carry his points he has been reduced to the neces-

* Although not authorized to use the name of the author of this valuable paper, yet, our confidence in his learning and purity of motive induces us to give it a place in our Journal. Our own views on the subject of slavery were published in the first volume of the Western Journal, page 231. And the subject having assumed a political aspect, we have ever since forborne to discuss it in our pages. But now, when the political excitement has subsided, a calm and unprejudiced inquiry into the nature of this institution cannot be otherwise than useful in establishing just views in the minds of all parties.

sity of using what the Logicians call *petitio principii*, and that his censures on those who uphold slavery, rest with all their force upon practices tolerated in his own adopted state, against which the voice of condemnation has not been raised. If charity should begin at home; so should wholesome admonition on popular vices; and he who shoots his arrows of censure at a distance, should learn first to look at evils which exist at home, and begin their cure, before he ventures upon those in a distant region.

For years, the author of these Strictures did not question the position taken by Dr. W., for he had not carefully examined them —supposing they would bear the severest scrutiny, until he was called to give instruction in Moral Science: then, he perceived, as he thinks, that some of his doctrines are mere *postulata*, sustained by no adequate proof or sound argument.

If the institution of slavery is to be judged of by "its effects" or rather *abuses*, and condemned as sinful by this course of reasoning: the marriage relation, an institution of God, is treated in the same way by unprincipled men who attempt to break it down: if Dr. W's. reasoning be correct, so may be that of infidels who profess to regard marriage as the greatest evil, and labor to show the gross injustice of the institution. So may those opposed to *capital punishment* make out a very fair case—affirming its cruelty and the disastrous moral effects it produces on community. In his attempts to show the wrong of slavery, Dr. W. has sanctioned the course pursued by the opposers both of marriage and the death penalty for any crime.

These Strictures are not designed as a regular review of the chapter on Personal Liberty—only as the expression of a few thoughts which were suggested by a perusal of the work; the periodical, through which they were to be made public, would be expected to admit only a short paper on the subject. If he has indulged in mis-representation or in a spirit that savors of undue severity, the writer begs leave to say, nothing was further from his intentions. He regards Dr. W. as one of the best of men and ablest writers of the age—one whose feelings he would not, on any account, intentionally injure.

"The "moral *principles* of the Gospel are directly subversive of the *principles* of slavery," par. 212. This is Dr. W's. position and he considers the matter proved, and regards slavery as "*indirectly* forbidden by the Christian religion;" of course ought to be abolished. Let *us* take a position: society "is directly subversive" of moral purity; for when persons come in contact and exist in communities, sin will be committed and vices practised; hence society ought to be discouraged—communities abolished, and all ought to live in a state of seclusion, as did the monks of the dark ages. But men ought to preserve their moral purity in society—the whole tenor of Bible teachings warrants this conclusion, and

impurity is not necessarily a concomitant on the institution of society—it is an evil that grows out of intercourse with one another, an abuse of privileges and comforts, which God grants his creatures. So it is in regard to the institution of domestic slavery: as men live in cities without being contaminated with the fashionable vices of the age; so they can retain slaves as domestics, and not contravene gospel principles and obligations.

It is clear that Dr. W. takes effects and results of slavery as produced by wicked men, that is, the *abuse* of the institution, for the system itself: hence his reasoning is inconclusive and his position not sustained. The Bible casts no blame on men for living in crowded cities or societies; yet it is true that these furnish frequent occasions for the commission of crime: so it casts none on us in regard to slavery, though we may abuse the system and are corrupted by abusing it. Men have lived pure in society, so also in the midst of domestic slavery and have received the approbation of the Judge of the whole earth.

That there are evils connected with slavery, and evils that might be remedied and cured, no one acquainted with it, denies. If Dr. W. would unite with the real friends of the South in curing these evils, instead of attempting to show that "the Christian religion forbids it," his powerful pen would be more usefully employed.

But the evils that are trumpeted abroad lie more in the imagination of abolitionists than elsewhere. It is freely admitted that a person *always free* would regard it as an intolerable burden to be sold into cruel bondage. But our slaves have always been in bondage, and cannot contrast their toils and degradation with the condition of freemen: hence it is not so intolerable. It is not true that their labors are burdensome, for they do not perform near so much work in the day as white laborers at the East and West. No person conversant with this subject will dispute this statement.

The slave does not feel his degradation and toilsome life half so much as does the poor man at the North: he was a slave in Africa prior to coming to this country—ignorant and superstitious to an incredible degree; and his condition has been greatly improved by being brought here, both in gospel privileges and in the enlightenment of his mind. The white laborer sees around him many in splendid mansions, riding in their carriages, clothed in purple and faring sumptuously every day, while he experiences the greatest difficulty to procure his bread: neither he nor his family is admitted to *social equality* with the rich, nor invited to their parties of pleasure and seasons of feasting. This sense of inferiority, hopeless, so far as bettering his condition is concerned, is more keenly felt, it is a severer trial for the toiler of the North than all the burdens of bondage at the South: the slave is *equal* with all of his color and hence is content with his station. The white man

rents a few acres of land or works daily on the farm of a rich man. When met by his employer, is he spoken to as an equal, or recognized as in social relations with him? By no means. He is known as Sam or Jim, seldom by his proper name or Mister. He is a *freeman* in name, to be sure, and can vote as his landlord advises; but can he remove and better his condition, if it becomes intolerable? Some can, but others are kept so involved in debt, that removal is impossible. He endures every indignity because he is unable to change his place or employer; he would flee with his wife and children, but knows the officer would pursue him, and he tamely submits to his fate, though full of anguish at present and of fearful forebodings for the future. The agony that he feels at his own inferiority and the gloomy prospect touching his family, are enough to crush any spirit, and turn a freeman into a kind of machine. The slave has none of these griefs—his condition is as favorable as that of any of his color—his bread and water, in scriptural language, are made sure by the laws of the land, sure in sickness and in health, for himself and family.

His condition is not improved if abolitionism help him to leave his master; generally it is much worse. There is no one that he calls master in the free States or Canada; but perhaps fifty who employ him, all eager to get out of him all the labor possible. He is cajoled with his *happy condition* and freedom from bondage; but does he live more comfortably or enjoy any *social privileges?* Not one: he is John or Dick, as he was on a southern estate: if sick and his work is interrupted, he must do the best he can for nursing, and then months are employed to pay expenses, which seem never to have an end. Many return to their kind masters, and hundreds more would after trying the kindness of the North, if they could; but shame is in the way and the interference of those that want their labor, and the want of means. In going North they were aided by abolitionists and their abetters; but if they turn their footsteps South, they are repulsed by all, and large promises are held out to retain them; and though they know they have lost much by the change, they are persuaded in ten thousand ways, to adhere to their condition in a *free* country.

In proof that "the moral precepts of the Bible are diametrically opposed to slavery," Dr. W. quotes: "Thou shall love thy neighbor as thyself &c." "It must be our duty to give to every creature every means for attaining a knowledge of the Gospel." P. 211—213.

Is the injunction of the Saviour: "Thou shalt love thy neighbor as thyself," carried out in its spirit any better in the *free* than the *slave* States? Do men in the former, as a general thing, try to benefit their neighbors more than those in the South their slaves? Do they see that all are well fed and clothed and possess the means of moral and intellectual elevation? Do not many perish every

winter from cold and famine in northern cities, for the necessaries of life? Does the North make such sacrifices to enhance the happiness of her poor, as to place it on an eminence when compared with the South? Slaves do not die for common necessaries. Are not cheating, over-reaching and bargaining almost *universal* at the North? Does not every man obtain his purchases at the least possible price and procure labor for the lowest wages—so low that they scarcely sustain human existence? What voice in regard to "the equivalent which they shall receive," have the poor women that make shirts at 12½ and pants at 20 cents; or the day laborer for the farmer, who alone has corn and sustenance for his family? Literally no voice: if you choose to labor at my price, well; if not, hundreds will be glad to do it: thousands of cases where the possessor controls the price of labor as surely as the laws of gravitation—the wants of the poor man forbid his choice—he must submit or starve.

What chances are "*given*" to such persons to "attaining a knowledge" of the Gospel? The census gives near *one fourth of a million* in the free States unable to read! On account of their poverty and poor apparel, they never enter a house of worship: they have less intelligence than many slaves. Think you it is common for the poor laborer to exclaim in regard to his rich neighbor, "he loves me as himself?" The slaves generally attend on the preaching of the Gospel, and have clothes to appear decent at public worship. Here are 100 families: some labor in factories, some on farms: now do not the rich farmers so manage their prices for work that the laborers never rise any higher in comforts or moral and intellectual privileges for years? Their houses are not so good and ward-robes not so abundant, food not so nourishing as are furnished the slave: his food and medicines are secured: the slave is physically and mentally happier than the poor man at the North, whose mental agony at his inferiority and poverty, and prospect of perpetual poverty of his children, are insupportable.

If it be our "duty to give every creature every means to attain knowledge," how many are there that come up to the standard? For the education of all should be equal—the rich should divide with the poor till all the funds were exhausted, in order to show "we love others as ourselves." But can Dr. W. point to a spot in N. E. where this golden rule is carried out to the letter? If not, it is hoped he will not degrade all the South for not surpassing the brightest spot in all the North.

After stating that "slavery is *indirectly* forbidden by the Christian religion," he observes: "one reason, may be, for this manner of forbidding it, is: it is "a *social evil*:" *direct* attacks on it might "have been the signal for servile war," and the Christian religion forgotten!

But is not marriage a "*social*" concern? Does the Saviour, for

fear of exciting civil commotion, take a *round about way* to put down divorce? Does he not attack openly the violation of marriage, and cut off all hopes of happiness from the violators of God's institution? Vicious men would rather part with their *property* than with these things that gratify their *licentious propensities*; that is, they would endure more easily a reform that divorced their servants from them and set them free, than one that broke up the practice of polygamy and adultery; yet Jesus condemned the universal prevalence of these vices, and taught that divorce could not be tolerated except for infidelity and unchastity; still no war overwhelmed the Christian religion, though passions stronger than ownership of slaves were condemned. The carnal heart will sooner be stirred up against resistance to the gratification of its corrupt desires, than against those who invade their possessions. Hence the Dr.'s argument is not logical. Rebellion is more to be dreaded from interfering with men's desires than with their wealth.

God has established "the conjugal, parental and filial relations" p. 213. All true. These relations exist among the slave population; but instances of willful separation exist, and sometimes wicked masters sever them. The husband, as the head of his family, controls it and no good master interferes. When wrongfully violated, it is the *abuse*, not the system itself. These relations are trampled on in the free States. Do not families voluntarily or compelled by poverty, separate? Are not children indentured for 10 and 15 years, exposed to be mal-treated and forbidden to visit their parents? Do not fathers, mothers and children frequently abscond or leave their families and never return? Wife-selling is common in England, if not in the free States. Is not divorce *common* at the North? If not so common as at the South among the slaves, it is so much so that the North has no ground to be proud of its eminence in this respect: the laws at the North forbid—public opinion, which is stronger than law, forbids it at the South. Bad men, whether North or South, trench upon these sacred relations; but if we argue as the Dr. has at the 209. page that "slavery is at variance with the ordinance of God from its effects;" then may we argue that all these relations are at variance with the ordinances of God; for if they were of God, they would not be so frequently violated, and such effects produced. This is just what has been pleaded against the marriage rite by Infidelity: France is full of this doctrine, and our own country is not destitute of this class of reasoners. Owen and his pupils have preached it throughout the land. They argue, as abolitionists do about slavery, that wedlock is the great evil of the age, and hence must be wrong, because some live unhappily in it, some break the bonds and maintain that society would be happier, if no such thing as marriage existed. Thousands are engaged to break down the institution. There are minor evils connected with it, yet the blessings outweigh all objections: there are serious evils in slavery, cruelty

and oppression; but these are concomitants of all temporal institutions. Wicked men create the evils in question in regard to the conjugal and filial relations; so in regard to slavery.

There is no happier community on earth than where the relations and duties of master and slave are properly observed and discharged: no happier people than in some parts of N. E. But let a disciple of Owen creep into that delightful N. E. society, as did the serpent into Eden, and sow his seeds of discord and discontent: all is turmoil and confusion, moral restraint is cast off, religious principle is undermined, the husband deserts his family and lives in promiscuous concubinage; parental authority is trampled under foot by the daughter; seduction follows and all the evils that embroil families and spoil their peace. So in the South: a meddlesome abolitionist comes into a peaceful neighborhood: soon a servant has been persuaded that he would be happier in a free State, and flees to it by directions of his adviser. Perhaps he was a husband and father, but he has trampled on those sacred relations on the representations of a villain and an ignoramus.

Dr. W. maintains that slavery "must be at variance with the ordinance of God from the effects upon morals and national wealth," p. 209. The position of the master is one where the evil passions are engendered, and much forcible reasoning is recorded on this point. But it is equally true, though not in so high a degree, in regard to apprentices: the master's pride and selfishness are excited by his authority over his apprentice—he chastises him cruelly, stints him in food and clothing, both in kind and quantity and in his opportunities for education. It is presumed that fifteen twentieths of the apprentices in the U. S. do not receive, at the expiration of their time, all that was promised them, especially in schooling: hundreds run away—most that remain till 21 are dissatisfied with the treatment they have received. Honorable exceptions of course, but they are rare. Indentured and hired females are subject to cruel treatment: they are seduced by the master or his sons. Hence, if slavery "is at variance with the ordinance of God from its effects;" so also is apprenticeship and the system of hiring others to labor for us: these must be abolished or its evils cured, else the North must cease its denunciation against the southern institution, for though liable to abuse, so is also that in vogue at the North. Advertisements for run-away apprentices are about as common as those for fugitive slaves.

But there is the safe-guard of self-interest in the owner of a slave to prevent his treating him cruelly: he is his own property—his life, health and usefulness forbid cruel treatment; not so with the master of the apprentice in so high a degree: if he labors till his term has expired, it is all a wicked man cares for. But the other has a life interest in the slave. The hiring and apprenticeship system occasions more litigations, ill will, unkind feeling and

unhappiness than the southern institution; hence the latter is a safer and better system to carry on the ordinary concerns of business than the other.

If slavery is at "variance with the ordinance of God because of its effects," what shall we say of all public works, railroads, canals, factories, commerce &c.? Are not vices of every kind, profaneness and desecration of the sabbath, engendered and multiplied by such public concerns? Are they sinful and at "variance with the ordinance of God?" The best men have stock in them; and though evil grows out of them—yet not necessarily—the owners are not responsible for them. If they are, then all such works and improvements as bring people together, where evils may be committed, must be abolished.

Dr. W. says: slaves are not urged to obey, as obedience to parents is inculcated, "*because it is right;*" but because "it is pleasing to God." But would obedience be commanded by the Law-giver of the Universe, if it were not right? The command makes the obedience right. If not wrong, it must be right. Is worship ordered because it is right, or because the command makes it right? Love to God is enjoined, not because it is right: hence it is of less importance than obedience to parents, since it is not connected with "*because it is right?*" This argument is rather small business for the mind of Dr. W. It smacks too much of special pleading to carry a point known to be difficult to prove. It is trifling on a serious subject.

Paul sends back Onesimus. Was it because it would be pleasing to God, or profitable to his master and a righteous act? He would not retain him without Philemon's consent,—a certain proof that he regarded the master's right in his slave, and control over him. How different was Paul from the abolitionists of our day!

Let us look further at this position of Dr. W. In 1st Timothy, VI., the 1st and 2d, "servants under the yoke (*hupo zugon doulai*) are directed to count their masters worthy of all honor—to do them service because they (the masters) are faithful or believers who receive the benefit." (McKnight) "They who enjoy the benefit are believers and beloved of God." (Ibid.) Obedience is commanded to Christian masters, not because it is pleasing to God, but because it is profitable to the owner. But is it possible, that God through the Apostle, commands obedience where the relation is sinful and ought immediately to be abolished? If it be wrong as Dr. W. has attempted to show; we should suppose Paul's teaching would be very different from what it is: something like this: "Let as many servants as are under the yoke, flee from their bondage, and if necessary, murder their owners and escape to some land of freedom."

Paul's conduct in sending back Onesimus to his master, is clear proof that he did not regard the relation of master and slave wrong.

If he had regarded the law wrong *morally*, he might have evaded it by seeming to know nothing about the fugitive's escape, affirming it was not his business to hunt up runaways and to return them to hopeless bondage. The officers of justice should see to this and see that the laws are executed. There was no obligation on a foreigner and *prisoner* to watch violations of the Roman statutes, and see that a slave-holder in Phrygia, many miles distant, should not be deprived of his property. Yet Paul sends back the fugitive, who was useful to him as a body servant, urging the master to prepare him a lodging, trusting through his prayers to be released from imprisonment to visit Colosse. Can it be supposed that the letter to Philemon could be written by a man who regarded slavery a sin? As soon might we suppose "Alexander's Evidences of Christianity" were written by an infidel.*

"Would the master be willing that another person should subject him to slavery &c.?" p. 212. Would the rich owner of a factory or farm in R. I. be willing to take the place and condition of his day laborers? If not, the relevancy of the question is not easily perceived. If the golden rule: "Do to others as you would be treated" would not constrain the rich of the North to exchange places with their poor workmen; surely Dr. W. can not expect the master to do so in regard to his slaves.

On page 208, Dr. W. speaks of "dissimilar rights" as produced by slavery and consequently wrong; but do these not exist in all countries? Do not the rich owners of money and property subject "the amount, kind and remuneration of labor" almost entirely "to their own will?" Do they not *grow rich* on the physical labor of hired men and apprentices? This is true in all countries where *mining*, *lumbering* or *building* and *public works* are carried on. One man employs 500 or more laborers for a remuneration in food, clothes and necessaries for family use. At the expiration of the year, he has cleared $10, 15, to 50,000 by the toil of his workmen, most of whom may be in debt to the employer. No one questions this as a fair business transaction: but the owner of half a dozen slaves which labor for his benefit, when in fact they have not raised their own food and clothing, is a most consummate scoundrel, guilty of a most unpardonable infringement upon the

* Late commentators think the expression "more than a servant &c." in the 16th verse is proof that Onesimus was "not a slave" and that such a direction to southern owners would savor too much of familiarity, and be offensive in the highest degree to the master's pride. Short letters of this kind, requesting a master to receive a fugitive, tired of being out, or that has been arrested, are very common occurences. As it regards *familiarity*, young ladies of the first families have been known *to kiss, at every meeting, the cheek of an aged female slave, who was deeply imbued with the spirit of the Saviour.* Dr. W. can not be expected to know affectionate regards that exist between the owners and good servants. Until the crusade of the abolitionists, no writer on the Epistle to Philemon questioned that Onesimus was anything else than a slave—the property of his rightful owner.

rights of the "down trodden slave;" a chattel, that is "unrequited for his toil." Put those men in the army or navy: if one runs away or commits an offence, is he not flogged most unmercifully? A son of *Andrew Fuller* received 350 lashes in the British service for some offence, and dragged out a miserable existence a few months till death came to his relief! The despotism in the army and navy is much more cruel than that among masters in the South, and Great Britain, "the bulwark of our religion," sends her emissaries to interfere with our institutions and break them up, when the laws in the South, in their practical operation, are not half so inhuman as those of England.

The writer alludes to the cruel practices in the army and navy, as a set-off to the horrible cruelty supposed to be in vogue in the South: all good men condemn them. But why should the South be insidiously contrasted with her neighbors? Why do we not find a chapter in the "Moral Science," proving that all governments that use force to control the incorrigible, should be abolished, and men allowed to act as they please? Cases of cruel punishment occur in the South as well as in the army and North, which no one approves; but they are incident to human governments and the passions of frail men.

If this whole subject be viewed in an impartial light, we shall all find enough ourselves to condemn without casting out "arrows and death" upon our distant countrymen; we shall see enough to do to correct the errors and vices among us, without holding up those in an insidious light, whose education and habits differ from ours. In the forcible sentiment of the New Testament, when we shall have extracted the beams from our own powers of vision, it will be time enough to cleanse the motes from those of our neighbors.

ARTICLE V.

Vegetable Physiology,

WITH A CURSORY NOTICE OF SOME OF THE ADVANTAGES DERIVED FROM SCIENTIFIC AGRICULTURE.

By R. DICKINSON WEBB, M. D.

When we submit a plant to chemical analysis, we discover that it is composed of two different classes of elements, one made up of simple bodies, not capable of being decomposed, as Potassium, Sodium, Calcium, the other of compound bodies, which are easily separated into their original elements, (C. H. O. N.) as woody fibre, starch, gum &c.—This points us to the fact, that plants

derive their food from two sources. Vegetable Physiologists have applied to these two species of food, the terms organic and inorganic, according to the purpose they subserve in the vegetable economy, the one supplying the plant with certain gaseous materials for its organic formations, the other certain mineral substances, intimately united with them, and closely connected with their normal growth.

If these be facts, it should certainly be a subject of interest to the agriculturists to examine into them, and discover, if possible, the organs supplying, the laws regulating and the means of increasing this supply of food.

When a seed germinates, the *radical* descends into the earth and becomes the root and rootlets, while the *plumula* rises into the air and becomes the succulent vegetable, the trailing vine with its rich flowers, or the tree with its towering trunk, its wide spread branches and deep foliage. This arrangement coincides with the fact already mentioned, that the food of plants is derived from two classes of bodies, and if we examine more minutely into the structure of these parts or organs, we will find that they are such as to subserve the double office of providing these two species of food. Every part, from the minutest rootlet to the smallest branches and leaves, is permeated by a network of pores or vessels through which the sap of the plant flows. This sap, like the blood of animals, is the nutrient fluid of plants, and in tracing its course, enquiring into the causes which move it along, and the changes it undergoes, we necessarily inquire into the functions of the organs, more immediately connected with the life and growth of plants, and thus lay the foundation of an investigation into the means of enriching this nutrient fluid with the proper pabulum of plants.

In all the higher orders of plants, there are two currents, one ascending, the other descending. We will commence with the ascending, which, beginning in the roots, passes to the leaves. This, it is seen, is contrary to the laws of gravitation, and we must look for some force by which this ascent is accomplished. This is found in the capillary attraction of the roots, and in a force generated by evaporation from the leaves. If a grape vine be cut off a few feet above the surface of the earth, and a gum-elastic tube fastened to the cut extremity, the sap will rise in the tube to the height of 82 feet (Carpenter) or equal to a pressure of $2\frac{1}{2}$ atmospheres, showing that there is a power which propels the fluid upwards, a *vis a tergo.* This power must be in the spongioles of the roots, and is dependent upon their absorptive power, or power of capillary attraction.

But if the experiment is varied and the lower end of the divided vine be immersed in water, it will be taken up and carried on to the leaves, showing *a vis a fronte*, which draws, as it were,

the water upwards. Experiment further shows, that this *vis a fronte* is in direct ratio to the rapidity of evaporation from the leaves, and that when this is checked, the current is also checked even though the *vis a tergo* remain in force. A striking illustration of this is seen in the retardation of the sap current in the fall when the leaves begin to decay, and its almost entire stagnation during the winter, when the trees are deprived of foliage.

Thus, by these two forces combined, the sap is raised to the leaves, where it undergoes some important changes, before it is prepared to descend through another set of vessels, which are most abundant between the bark and wood. The mechanism, by which the contact of the air and the circulating fluid is brought about in the leaves, is beautiful and very nearly resembles the breathing apparatus of insects, which, instead of a single tube (trachea) leading from the mouth to the lungs, and then ramifying in the tissue of this organ, have a number of tubes or tracheae, with their stomata opening on the lateral surface of the body, ramifying through the entire structure of the animal.

The leaves, in addition to the vessels running in a labyrinthean network through their structure, have on their surface a great number of stomata, through which the air enters and reaches the circulating fluid. These stomata are guarded by two or more cells which are under the influence of light, being closed by night and open by day; and hence the greater evaporation by day when the air is freely admitted to the sap.

Thus by the great number of the leaves, and the minute network in their texture, the sap is spread over an immense surface and freely exposed to the air. By this means a large quantity of its superfluous water is carried off, while at the same time the remainder becomes more fully impregnated with carbonic acid and ammonia received from the air. By these changes the sap is now better prepared for the nutrition of the plant, and commences its descent. If every part of the plant descended, there would be no difficulty in accounting for the descent of the sap; but we often see plants with their branches much lower than the main trunk, and pendent branches hanging from the trunk. This is beautifully seen in the banyan. Yet these two currents pursue their usual course, one seeking the extremity, the other the root. Again, if we examine this downward current in those plants which admit of it, we find that, while the general current is downward, it will often in some of the vessels become stagnant for a moment, and then turn in an opposite direction. This could not take place if it were propelled by a *vis a tergo*, and we must look for a new cause, independent of gravitation, or any force the fluid may have received prior to its descent. Professor Draper of New York has advanced a theory, which beautifully accounts for this. He has proven by experiment, that when a tube is filled with a fluid, and then im-

mersed in another fluid for which it has a greater affinity, the first one will be driven out; and so of a number of tubes. Apply this to the descent of the sap. The fluid starts from the leaves, and here giving up that portion of its contents which this part of the plant requires, it loses its affinity for it, and is attracted to another part, which it in turn supplies; and here giving up another portion, it is still driven on to a new part, where there is still a demand to supply the growth of the plant, and so on until it reaches the root; and thus, wherever nutrition is going on, a demand is created and supplied.

It is upon this force created by an active nutrition, that we can account for the more rapid circulation of the sap in the spring.

We have thus seen that the sap, commencing in the roots where it is impregnated with any soluble mineral, or gaseous substance that surrounds them, by the combined forces of the rootlets and leaves, reaches the leaves. Here it undergoes important changes from evaporation and impregnation with carbonic acid and ammonia. It next descends in a set of vessels between the bark and wood, yielding up under the peculiar selective power of plants, its mineral and gaseous substances for the nutrition of the various parts, each one selecting that which its organization requires,—bark forming bark, wood forming wood, &c., all from the same nutrient fluid—the sap.

Seeing, then, that this is the fluid which must furnish the pabulum for plants, it becomes a matter of great importance, that this should be rich in all the materials necessary for the healthy growth of the plant. The question here naturally arises: is it possible by any means of art, to increase the amount of pabulum in this fluid? I answer: it is.

It will be remembered that in the beginning of this article, it was stated that chemical analysis shows plants to be composed of two classes of bodies, derived from two species of food known as organic and inorganic. Vegetable Physiology teaches that these two classes of food are taken in by the roots and leaves, the former absorbing a fluid impregnated with both mineral and gaseous substances found around the roots of plants, the latter impregnating it more fully with the gaseous bodies, carbonic acid and ammonia. Thus it is evident, that the inorganic food of plants is furnished alone by the roots, while the organic is furnished principally by the leaves, but also by the roots. Physiology further shows that this food is circulated through the plant by means of a nutrient fluid, the sap; an analysis also shows, that this sap is nothing but water impregnated with gases and minerals. Now we all know, that we can take water in a bottle, and impregnate it at will with gases and minerals. And is it not as easy to do the same with water in the pores of a plant? At first view, you might answer: no. But remember how much nature has done to assist you and the me-

chanism (so to speak) of the nutrition and growth of plants, and you will see the task is an easy one. The water is taken from the earth by means of the roots, and carried by the circulating apparatus to the various parts of the plant. Why can you not, then, impregnate it with the necessary minerals by applying them to the soil around your plant, and thus supply the inorganic food, or increase the organic (largely supplied from the air, as shown when speaking of the function of the leaves) by applying vegetable manures, which in the process of decay, furnish carbonic acid and ammonia? But you may be disposed to say that we are ignorant of the mineral materials necessary for the growth of plants, and how shall we know what to apply? This ignorance in the present advanced state of agricultural knowledge is your own fault, and you have only to refer to the columns of some well conducted agricultural paper, or some work on agricultural chemistry, and you will there find not only the materials, but the exact proportions of each one, of all the more common articles of culture; and if you wish to know the ingredients of a new plant, you only have to burn it carefully, send the ashes to a practical chemist, and he will tell you of what the mineral portion of your plant is composed; and the organic portion of all is the same.

But in order for this to be done beneficially, you must also know the nature of your soil, and not apply what is already superabundant, while the deficient material is still left deficient.

Thus by a scientific, direct application of manures, you may increase the amount of pabulum in the circulating fluid; but it is often expensive or inconvenient to procure such manures, and it is then a matter of economy or necessity, to know how to develop the means supplied by nature.

This would bring us to the investigation of the art of farming based upon scientific principles, which is a broad and interesting field, and one that should command the attention of every farmer.

It is impossible, within the limits of the present article, to go into the details of all the mechanical appliances of the art of farming, and I must hence confine my remarks to a few of the advantages to be derived from a proper system of farming, and leave the mechanical operation to the judgment of the reader, who feels disposed to try it. The first means of which I will speak is *Draining*.

The apparent object here is to get clear of a superabundance of water, and no doubt, many believe this is the only object attained; but let us examine this process more closely.

In order to do this, we must inquire: what is the effect of water upon the soil?

1. It diminishes the temperature,
2. It renders it compact and impervious to fluids and gases.

You are ready to inquire: in what way does it diminish the temperature, and what effect does diminished temperature have upon

the products of the soil? It diminishes temperature 1st, by the evaporation which is continually going on, and 2d, by preventing the rays of the sun from penetrating the soil, and thus raising the temperature.

This diminished temperature is immediately connected with the products of the soil, by the influence it exerts upon germination and growth. One of the necessary conditions of germinati n is a certain degree of heat, and farmers can all testify from their own experience to the difficulty of getting their seeds to germinate too early in the spring, or in too wet places, where from the amount of water, the ground is below the temperature necessary for germination.

The same laws apply to the growth of plants, and you find your wheat, corn or hemp growing slowly and looking badly in the same places where you met with a difficulty in germination, until late in the spring, when the water has been removed by evaporation. Thus, in removing the water by a proper system of draining, you raise the temperature of your land, and accomplish early in the spring what is slowly brought about by evaporation.

But if you suffer your land to become dry by evaporation, instead of removing it by draining, it is left in the condition mentioned as the second effect of water, viz. *compact and impervious to fluids and gases*,—and thus it happens, that, if at any time during the summer, you have either a severe drought, or a superabundance of rain, your crop suffers in these wet places. It may be necessary to explain how it is, that here we have an agent that seems to blow hot and cold, wet and dry, at the same breath. It is plain to every one, that if your soil is in a compact state, when an abundance of water falls upon it, it will be retained too long and prove injurious; but how is it, that where the opposite condition obtains, this place which was before so wet, becomes drier than any other? This is also readily explained, if you remember that this wet place is rendered impervious to *gases* as well as fluids, and that, while your soil in other places which is well pulverized and porous, admits freely the atmosphere which always contains a certain amount of vapor or water, this compact soil rejects it, and thus is deprived of the small quantity of water which is made available to the porous soil.

Another manner in which your compact soil injures the growth of your crops, is by depriving the sap of the gaseous materials with which it is impregnated, before taken up by the rootlets in a more porous soil. The atmosphere, in addition to vapor, contains also a small quantity of carbonic acid and a trace of ammonia. These are absorbed by the water around the rootlets, and thus find their way into the circulating sap or nutrient fluid of plants.

Thus by a compact soil, you deprive your plant of moisture, carbonic acid and ammonia, which are all necessary for its healthy

growth. To sum up then, by draining you get clear of a superabundance of water, and thereby raise the temperature of your land, enabling you to procure a more certain and more early germination of your seeds; you render it more porous and thereby suffer the water which may fall in too great abundance, to pass quickly off, the vapors to penetrate it in seasons of drought, and the sap to become impregnated with carbonic acid and ammonia, which furnish the elements of organic food for your plant.

Subsoiling is another means by which you may take advantage of the natural fertility of the soil. This, by rendering your land porous to a greater depth than ordinary plowing, answers the same purpose as draining, by preventing water from remaining too near the surface, and in rendering it permeable by gases; but its principal benefit is in permitting the roots to come in contact with the minerals of the subsoil.

Every fertile soil contains a quantity of organic matter and mineral substances.

These mineral substances, when once exhausted, can only be supplied by the direct application of manures, and hence the necessity, when there is a deficiency near the surface, of availing ourselves of those more deeply located. This is accomplished by the process of subsoiling, whereby the roots penetrating deeply below the surface, take up minerals that would otherwise never be reached.

The advantages derivable from horizontal-plowing, and hillside ditching, where the land is so rolling as to be obnoxious to "washing," are so evident as to render it scarcely necessary to point them out. In early spring your ditches carry off the water from the numerous little "scaping springs" upon the hill sides, in summer your horizontal furrows catch and retain the moderate showers of rain, or if they are severe, convey them to the ditches by which the water is carried off, and thus prevent such an accumulation as to form those angry hill-side torrents which cut their deep and ruinous "gullies" through your plantations.

The last thing to which I will allude, is Fallowing, or Resting. This is a term peculiar to American agriculture, and should be deserted both in practice and language, for the equally feasible and more philosophical system of Rotation; for by the latter, you gain all the advantages of the former, at the same time that you procure a crop from your land, or if you suffer the growing crop to remain, you add to the organic elements of your soil.

The beneficial action of Fallowing is based upon the fact that many of the mineral constituents of plants exist in the soil in a combined or insoluble state, and in this condition they are not subject to the action of the rootlets of plants, which can only take up mineral substances after they are reduced to a soluble state. It matters not, then, how great a portion of minerals a soil may

contain, if they are in an insoluble state, it amounts to the same thing as if it had none at all. Fallowing, which is but another name for *time*, in its agricultural sense, permits the natural agents of decomposition, heat, moisture, cold and oxygen, to break up these compounds, and thus develops the mineral materials of the soil. Rotation is based upon the same corroding action of time, and the additional fact that different plants require different minerals for their growth.

Thus silica and phosphorus are found in wheat and the cerealia generally, potash is found in abundance in the grape, while clover has but little potash and no phosphorus. From this fact, by examining analytically our plants, we may get up a system of rotation by which the crop of one year does not interfere with that which follows, and by extending this system to three, four or five years, you allow the minerals exhausted by your first crop to accumulate in a soluble form, ready for its repetition.

It will be seen that I have confined my remarks to that branch of the subject, which has for its object the development of the resources contained in the soil, and hence have spoken almost exclusively of the inorganic or mineral elements of soils, because 1st, these are most liable to become exhausted, and 2d, because the organic elements are principally, or at least in great part, derived from the atmosphere, and, owing to the constant motion of this fluid, they are not likely to be deficient. But there may be soils in which there is a superabundance of minerals, with a deficiency of organic elements. In such lands, the proper course is to increase the organic elements. Of these, that which is most liable to become deficient is nitrogen, from the fact that it is contained largely in seeds and fruits, and these are the portions of plants which are usually removed from the field.

Hence the utility of organic manures is usually in proportion to the nitrogen they contain. It may however, as in the case of mineral manures, be expensive or impracticable to procure these organic manures, and it is then important to increase these elements in your land, by natural processes.

This can only be done by suffering a suitable crop (clover for instance) to grow upon the land and not remove it; or if you wish to derive only a partial benefit, suffer this crop to be grazed upon by sheep or cattle, kept constantly upon the field, and thus while you fatten your flocks, they return the larger portion of the elements to the land in the form of excrements. It is on such land as this, that the great superiority of rotation is seen over fallowing. While you derive all the advantages of the latter from the influence of time upon the mineral elements, the growing crop, by means both of its roots and leaves, is accumulating from the atmosphere, carbon and ammonia, and laying them up in its tissues ready to be returned to the soil for the growth of the next

crop, and in this way you add actually new elements to your soil, as much so as if you should haul the manure from your barn yard or buy your guano from the Pacific isles, and throw them upon your land.

But this communication has already extended to a much greater length than intended.

ARTICLE VI.

Thoughts on the Subject of Railroads.*

BY J. N. M. HARDING.

We will suppose ourselves in St. Louis. We know this city to hold a central position on the great natural artery of trade—the Mississippi river. We find St. Louis to be the metropolis of the West; a region whose natural endowments are, on the same scale, unrivaled in the wide world; and where emigration is rapidly tending, as to a land of promise, whose future history presents to the practical and enterprising mind a sublime spectacle of industrial greatness and power. The hand of Nature seems to beckon the industry of every nation here; and anticipation seems to say: "they come, still they come!"

Every thing alluded to by this view, is not only probability and fact, but a natural sequence. The social and domestic wants of the world, at this time more than at any former period perhaps, are many and urgent. Our political influence, as a free government, is working its legitimate consequence in Europe. Thousands in the old world are turning their hopes hitherward for freedom and a home. Man's inherent rights are on the side of "Young America;" and men are rushing here to claim and enjoy them.

And here the question comes upon us: What are we not equal to in enterprise? And again: What will we not require to facilitate our domestic, social and civil needs? These two questions are to receive our present thoughts.

St. Louis, as also the interest of the West, requires a facilitated, constant and efficient land carriage towards the North. To help us in treating of this, we will have recourse to "*Veritas*," writing

* These *Thoughts* have been hastily put together, and are presented without any revision. We have treated the matter upon its local merits, as a mere appendage to the letter quoted. The task were easy to show the advantages of such a road upon the West and South in general—but such was not our present object. So far as we have viewed the subject, we have confined ourselves the simple merits thereof.

from *Lancaster, Schuyler Co., Mo.*, to the "*Intelligencer*" of recent date. This sensible writer says:

"GENTLEMEN:—As this is the age for Railroads and Railroad Improvements, I would call the attention of the public, through your widely-circulated Journal, to the importance of the proposed Railroad from St. Charles, up the grand divide, to the Iowa line, or to the northern boundary of the State of Missouri. The route proposed is one in which the citizens of St. Louis are more deeply interested than in any route extending west, from the fact that it runs through one of the richest and most fertile portions of the State—a country which, at present, is entirely agricultural. A portion of it is settled rather sparsely, but let the road be once commenced, and the whole length of it, and for miles on either side, would soon be densely populated. It would settle up as if by magic, and it would soon be the case—perhaps by the time the road was completed—that there would be an amount of produce conveyed on the road, equal to any road in the State. It would also be the means of bringing capitalists in the neighborhood of the road.

It is now an important inquiry with capitalists emigrating west, where they can get good land? and the next inquiry is, what are the facilities for a market? Hence you find that a large proportion of them settle as near some navigable stream as it is possible for them to do. Then they have difficulties to encounter that are not common, or would not be on the proposed railroad—no danger of overflows, such as we had in 1851, and previous years, nor any of the influences that operate so powerfully on the health of those contiguous to large streams, from the miasma peculiar to them. Let Congress grant the right of way to this Company, and give to the State the alternate sections of land for six miles wide on each side of the road, and let the State sell the land so granted for two dollars and fifty cents per acre, and let the General Government sell at the same price, (which she would be able to do, and could do, under the circumstances, much earlier than she could at the existing prices, and under existing circumstances,) then the Government would lose nothing, and the State would be enabled to commence, and, in all probability, complete a work that would redound to the benefit of her citizens at large.

The country from St. Charles to the northern boundary of the State, is one over which a railroad can be built at a much less cost than any other road in the United States for the same distance. The distance is about 220 miles; and I have no doubt the road can be built for seven thousand dollars per mile. If this be a fair estimate, then the entire cost of the road would only be $1,540,000. Then suppose the United States should grant the six miles of land, and that should be sold at the price of $2 50, (allowing for a portion that is already sold) there would, in all probability, be thirty

townships, containing thirty-six sections each, and each section containing 640 acres. We should have 691,200 acres of land at $2 50 per acre, which would be $1,728,000, a sum sufficient to build the road and pay all incidental expenses, such as surveying, etc., etc. And if we were allowed to select other lands in lieu of those entered, which I think has been the practice in other States, we would not only have a sum sufficient to build the road, but put the cars on it, and establish depots at suitable distances.

It appears to me that St. Louis ought not to leave any stone unturned until this object is accomplished. Iowa will, at the next session of her Legislature, grant a charter from Fort Des Moines to the State line, to connect with our road, *and they are a working people.* Let them get their road in operation, and the trade of Northern Missouri will immediately find a northern market, by the way of railroads that are now in contemplation, some under contract and some completed, which will connect Fort Des Moines with the Lakes; and the road from there to the northern boundary of this State will be safer, cheaper, and more easy of access to Northern Missouri than any route we will then have, unless the road from St. Charles to the northern boundary of the State is completed as soon as that is. Our business, for a large section of the country, now centres at different places on the Mississippi River, and we have a hard time of it with teams plunging through the mud, sometimes up to the axle-trees. The prices of hauling are such that there are a great many articles of produce that this country is adapted to the growth of, that, at the present prices of transportation, will not pay a sufficient price, after deducting expenses, to justify the producing, or at least the sending to market corn, wheat and tobacco; we would have to pay for hauling and shipping wheat, for instance, thirty five cents per bushel to St. Louis, when if we had a railroad, the price would not exceed ten cents per bushel.

This proposed road would run through St. Charles, Warren, Montgomery, Callaway, Boon, Randolph, Macon, Adair, and Schuyler counties, in the last of which it would terminate. All of those counties are well adapted to agricultural purposes, and in some of them iron ore and stone coal are found in abundance; for instance the northern part of Callaway county, near where the road would run. This road would cross the Hannibal and St. Joseph Railroad in Macon county, where a large portion of the trade would take the St. Louis shoot instead of going to Hannibal and then to be reshipped. If these positions be correct, and I am inclined to the opinion that they are, from the fact that the St. Charles route will be the cheapest, then the trade from a rich, growing and populous country west of Macon county, by this means would go directly to St. Louis. Let it take the Hannibal route, and St. Louis has no assurance that it will come there. Illinois is constructing a road

from Quincy to the Illinois river, by which, in all human probability, a portion of the trade would go, in the event it once reached Hannibal; and let that road once be put in operation, you will see steamboats running from the canal to Hannibal, a line of regular packets will be started, and then you will find that almost all of that trade will seek a northern market, unless it is intercepted by a cheaper route. From these considerations I cannot but think that St. Louis is deeply interested, and that the people on the entire length of the route are interested. I hope that some person, more able to do this subject justice than I am, will take it under consideration, and that a spirit will be aroused that will be felt in the halls of our Legislature, and the halls of Congress; and one that will arouse the masses to action, and to such action that will tell as a lasting monument to ages yet unborn."

This is seeing the right question from the right point; tho' the writer has not entered into so minute a demonstration of the necessity to St. Louis of such a road, as the merits of the subject really allow. He should have shown how unequal the Mississippi river is to meet the requirements of increasing trade, from the North of this great valley to the South—the natural current of trade. To make up for his omission, we will advance the following reflections.

The Mississippi river, during each year, almost invariably, is twice brought to a state impractical to the transmission of goods and products—by ice in winter and low water in summer. To guard against these periodical obstacles to trade, the producer is obliged, regardless of prices, weather, health, and many other considerations, to avail himself of the practical stage of the river, and ship his effects; and as this necessity is simultaneous with thousands of producers, the market is periodically glutted, prices depressed, and the producer's energy, industry and ambition go unencouraged and poorly rewarded.

But this view comprehends those producers only who are located within a reasonable distance of the Mississippi;—those living remote are in a far more deplorable situation, with regard to trade and its advantages.

We will take a central point between the Missouri and Mississippi and Iowa. We here find a region in all respects naturally inviting agricultural enterprise: and we will suppose it under a high state of agriculture—teeming with products so necessary to the world's comforts and wants. But the question arises: How is the farmer, thus situated, to reap a reward of his labor? He must effect an exchange of his surplus produce for others not naturally attainable by his farming operation—he must trade; but he cannot trade under existing circumstances—having no commensurate facilities.

Perhaps the reader thinks that the foregoing letter is ample in bringing conviction of the practical necessity of the road of which he speaks. That letter is sensible and truthful; still we will try to

bring the reader into a closer identity with the real condition of farmers located as we here suppose, and, at this very day, actually so circumstanced, in relation to the subject of trade.

There is a sowing season, and there is a reaping season common to our staples and climate. Over these, men have no control: they must suit their operations to these periodicities, established by the Author of Nature. Now, we must, in order to comprehend the subject more fully, see how these last-named periodicities conflict with those impractical stages of navigation, alluded to above.

The sowing and planting season, North of St. Louis, is from the middle of March to the first of July. During this season, producers (we are considering those remote from navigation, more particularly) are, from a sense of duty, under the necessity of giving their personal attention to the planting and cultivation of a new crop—for he that will not sow, shall not reap: their whole forces —both man and beast—are employed about the new crop. This is a fixed fact, and, consequently, these producers cannot, during this period, attend to the hauling of the old crop to a place of shipping. And does not this period embrace the best shipping stage of the rivers throughout the whole year?

But it may be asked: Why do not these producers take time by the forelock, and have their produce hauled to a place of shipping during the winter season, when they have no crop to plant or cultivate? This may seem to be a poser; but we find it not difficult to prove the impracticability of such a thing.

The hauling of a large quantity of such agricultural staples as are grown in North Missouri and Iowa, to say nothing of minerals, a distance of seventy or a hundred miles, would require much animal power. A much larger number of horses or oxen would be required for this business, than would be equal to the farm-operations of cultivating such staples. Thus we find that a considerable beast capital and force must be maintained in passiveness, a great part of the year, in order to enable the producer to fetch his produce to a place of shipping.

Again: we all know the condition of dirt roads in winter, through loamy soil districts; that they are more or less soft and miry, making tardy transportation more tardy and burdensome. But admit that the roads were always firm and passable, that the farmer was able, with but little difficulty and expense, in mid-winter, while the duties of his farm do not require his hands and teams at home,—admit all this; still we ask: Are all the obstacles in getting his property to market, removed? Not at all. At this very season the rivers are usually blocked with ice. But he can store, in charge of a commission merchant, against the opening of navigation, in the spring. Very true. But will this system pay? Ah, this is the rub, the difficulty! It will not pay: and amateur farmers are not common in this country.

But it may be advanced: Are there no pleasant fall months, when the rivers are in fine stage of water? Why does not the farmer avail himself of this favorable time, to fetch his products to a shipping point? To meet this, we will only state, that agricultural staples are not only to be sowed and cultivated; they are to mature, to be harvested, to be garnered, and to be got into marketable order, all before the shipping operation. In this preparation, the laws of nature have to be waited on, and winter is at his door, before the farmer can get his summer's harvest of grain and tobacco and hemp in a merchantable condition.

The producer cannot ship, as a fixed thing, between the time of wheat and barley harvest, and that of hemp, tobacco and corn—namely, from the 20th of August to October, on account of low water, which is the usual stage of the rivers at that season. Thus it is seen, that one of the finest regions of the world, for agricultural pursuits, is shut out from commerce, for the want of a conveyance, such as a railroad alone affords.

Need we offer more to convince an enterprising community of the necessity of this road? Should Congress and our State Legislature hesitate in fostering so needed and practical a work? We hope they will not.

Our next view will be turned towards the South. We will endeavor to show what changes are taking place in the carrying trade of the world, both as to the kind of merchandise and the locality of ports of entry. This we will hold over for a subsequent issue.

ARTICLE VII.

Ocean Steamers on the Pacific.

The following Memorial, praying the aid of Congress in establishing a line of Ocean steamers from California and Oregon to China, is now before Congress.

In our estimation, no measure relating to the foreign commerce of the United States is of more importance; and we trust that Congress will not adjourn without making provision for carrying it into effect.

Our knowledge respecting the cost of building and equipping Ocean steamers is not sufficient to enable us to judge of the terms proposed by the memorialists: though they would seem to be liberal enough. We have one objection, however, to this document which we cannot pass over in silence. The memorialists are evidently looking to the acquisition of one hundred and fifty sections of mineral land at $1.25 per acre. The price offered may, in fact, be

more than the land is worth; still, it looks like a monopoly involving the principles of a bold speculation which should never be encouraged by the Government.

The establishment of a line of steamers from our western shores to China, is of sufficient importance, in a national point of view, to authorize Congress to adopt the measure upon principles which may be fair and just in respect to any private interest, that may be connected with it, let it cost what it may. And, in our estimation, the Government would compromit its dignity and become a substantial party in the speculation, were Congress to accept the proposition of the memorialists touching the sale of mineral lands.

Editors.

MEMORIAL.

To the Honorable the Senate and House of Representatives of the United States of America, in Congress assembled:

The memorial of James B. Moore, Josiah Lawrence and Henry H. Goodman, of Ohio, and John H. Diehl, of Pennsylvania, and their associates, respectfully represents:

That the settlement of the question of our territorial possessions in Oregon, and the acquisition of California, have opened to the people of the United States a new and comprehensive field of enterprise and usefulness. The value of these territories, whatever may be their climate, richness of soil, and mineral wealth, is chiefly and pre-eminently to be found in the circumstance, that they bring us, over an extensive line of sea coast, supplied with magnificent harbors, into immediate communication with the rich, extensive, and innumerable sources of commerce on the Pacific ocean. A direct way is opened up to the coasts of China, Japan, Corea, Manchuria, Siberia, the Indian Archipelago, India, Persia, Arabia, Abyssinia, the eastern coasts of Africa, Madagascar, Australia, and the unnumbered islands, rich and varied in their productions and mineral resources, scattered through the vast expanse of the Pacific ocean. The whole field of trade with the Oriental countries, containing a population of over six hundred millions of human beings, constituting more than one-half of the population of the whole earth, is thus brought within the reach of American enterprise. And it is now within the power of our Government, by a sagacious and enlightened course of public policy, to provide new and extensive markets for the various productions of our country, vastly and pre-eminently more important and advantageous than those which are supplied by our trade across the Atlantic.

No person who will take the pains to inform himself on this subject can fail to appreciate the incalculable advantages, which may be derived from this vast theatre of commercial enterprise. A historical fact is communicated in a late annual report of the Secretary of the Treasury worthy of repetition: "In ancient and in modern times, the cities and nations that secured the trade of Asia were greatly enriched; we have witnessed this successively with Tyre, Sidon, Carthage, Alexandria, Venice, Genoa, Lisbon, Amsterdam, and London, whilst this rich

traffic built up large cities, even in the midst of deserts, in the caravan route of the tract through which it passed." If such effects have been derived from the trade of these countries in time past, how stupendous the results to be anticipated hereafter, from the enterprise and energy of American citizens, with the advantage of steamships and the other modern improvements in navigation.

The central position of our country, between the great commercial marts of Europe on the one side, and China and the East Indies on the other, has pointed it out as the great thoroughfare for the chief part of the trade and travel between Europe and Asia; and if our people avail themselves of the advantages which this and other circumstances have placed within their power, the United States must ultimately become the great centre of the commercial world, wielding a power and influence upon the welfare, freedom, moral condition, and destiny of mankind, beyond that of any other nation of the earth. The exchange of commodities, and friendly intercourse between nations, is not alone a source of wealth and power, but an auxiliary of great potency in the advancement of civilization and christianity.

It is not the purpose of your memorialists to speak of the vast and incalculable results upon the moral, physical, and intellectual condition of mankind, consequent upon a direct commercial intercourse between the people of our country and the myriads of the human race in the heretofore almost unknown countries of the East, further than to say, that the intelligent freemen of the United States are fully awake to the great events which are opening upon them, the high destiny which awaits their country, and the heavy responsibility imposed on their Government in the onward march of human improvement.

Those who suppose that the people of this country, under existing circumstances, will be content to remain inactive, and passively await the slow developments of time, and not avail themselves of the great means of advancement, which an overruling Providence has, for wise purposes, placed in their hands, mistake the spirit of the age, and underrate the genius and character of our people.

Already this great work has been more than commenced. A line of monthly mail steamers from New York to Chagres, on the Atlantic side of the Isthmus of Panama, and from Panama, on the Pacific side, to California and Oregon, has been established, and is now in operation. And a railroad communication from the Mississippi river to the Pacific coast is already projected and in contemplation, and will, at no distant period, be in successful operation. These expensive lines of communication, by steamships and by railroads, will not accomplish the greatest objects of their creation till a direct and regular line of communication by steamships shall be established between California or Oregon and the coasts of Asia.

Deeply impressed with the paramount importance of a commercial intercourse with the populous countries of Asia, your memorialists have for several years directed their attention to the subject of establishing a line of steamships from our possessions on the Pacific to China and its dependencies, and have spent much time, and incurred no inconsiderable expense, in acquiring information relative thereto. The undertaking is one of great magnitude, requiring a very large outlay of capital, and cannot, at this time, and will not probably at any

future time, be successfully prosecuted by private enterprise alone, without the countenance of the Government. Regarding the great interests involved, and the vastly beneficial results to be produced upon the prosperity of this country by such an enterprise, it is not to be supposed that the fostering hand of Government will be entirely withheld from it.

Your memorialists have made arrangements which enable them to make the following propositions, to wit:

1st. To establish a direct and regular line of communication, by steamships, from some point within the State of California or the Territory of Oregon, or both, to Shanghae and Canton, in China, to be run by alternate trips, as your memorialists may decide, after a thorough examination of both countries, with a branch of the line by smaller steamers from Oregon or California to the Sandwich Islands, to be commenced by a semi-monthly line of steamships on or before May, 1857, and to be increased to a weekly line on or before May, 1862, and continued till the first of May, 1882.

2d. The steamships to be constructed after the most substantial and approved model, as war steamers, under the direction of a naval constructor, to be appointed by the authority of the United States. The steamships employed on said lines to carry the mails of the United States, with any number not exceeding two post office agents, and any number not exceeding four naval officers of the United States, on each ship, and also carry all diplomatic agents of the United States, who may be going or returning, on said lines, on the business of the Government. And, further, that in the event of a war, or other national emergency, the said steamships, or any number of them, to be liable to be taken by the Government, upon payment to your memorialists or their successors, of an equivalent therefor, at a fair valuation, to be made by impartial persons.

This proposition is made on the condition that the Government will, in view of the important service to be rendered, and the vast benefits to result from said lines of communication, pay to your memorialists, or their successors, in quarterly payments, a sum equal to the amount received by the Government for postage on all letters, newspapers, and mail matter of every description, which may be carried by said steamships between the points designated; and, in addition thereto, a sum equivalent to the amount of the one-half of the revenue collectable by the Government on the goods imported by said steamships: *Provided*, That the whole amount paid to your memorialists, or their successors, shall not amount to more than an average of one hundred and fifty thousand dollars per ship per annum for each and every ship employed in both lines during the continuance of the contract; and, also, that the Government will sell to your memorialists, or their successors, at the rate of one dollar and twenty-five cents per acre, one hundred and fifty sections of land, of six hundred and forty acres each, to be selected by your memorialists, or their successors, from any lands within the Territory of Oregon, not claimed by any person, and belonging to the United States.

The steamers constituting the line between California or Oregon, and Shanghae, in China, shall not be less than four thousand tons burden each; on the branch line from Shanghae to Canton, not less than

fifteen hundred tons burden each; and on the line between Oregon or California and the Sandwich Islands, not less than two thousand tons burden each.

The sagacious and enlightened statesmen of this country cannot be insensible to the magnificent advantages of the proposed lines of communication. They would open new markets, augment the price of our articles of export, stimulate the industry and productive energies of the country, and increase the aggregate receipts of our people from their exports, each and every year, to an amount far beyond the cost of fitting out and establishing these lines of ships.

For years the business men of our country have been fully alive to the fact that the financial operations of this country have been dependent upon, and in a great measure tributary to, the money markets and trade of Europe. The change and new direction which it is proposed to give to our commercial affairs, and the free access to the Asiatic markets, would unfetter our commerce and cut it loose from its dependency upon the financial operations of Europe, and not only relieve us from the tribute now paid, but make the money markets and trade of Europe tributary to our own country.

Whilst the proposed enterprise will open new sources of trade and riches, and create commercial wealth, it, at the same time, provides for their protection, and the establishment of the supremacy of the United States over the richest and most valuable commerce of the world. The proposed war steamers, subject to the use of the United States in case of emergency, would furnish, at all times, an immediate and reliable protection for the commerce and maritime interests of the nation. The building and fitting out such a fleet of vessels, at the expense of the United States, would require the labor of some years, and cost the Government several millions of dollars more than the same can be procured for by private enterprise; and an expenditure so large that the Government would not, for many years, and at perhaps no future time, be willing to incur.

The Committee on Naval Affairs in the House of Representatives, at the first session of the twenty-ninth Congress, in a very able report made by the Hon. T. Butler King, as chairman, proposed the establishment of a monthly line of war steamers of the largest class from California to Shanghae and Canton, in China, and also another to the Sandwich Islands; the vessels to be constructed and the line kept up at the entire expense of the United States, for the conveyance of the mails and protection of our commerce on the Pacific. This proposition, which would cost the Government many millions, is sustained by arguments in the report, based on statistical facts of a highly satisfactory and conclusive character. The proposition of your memorialists would afford the Governmont all the advantages to be derived from the proposed line of Government vessels, whilst it would cost the United States comparatively but a small amount; and through the energy of private enterprise and its engaging in trade, would afford vastly superior advantages in giving our country the control of the Asiatic markets.

The proposition of your memorialists comprises an union of commercial enterprise with military defence in a manner which, while it affords a certain reliance at all times for the protection of our national

rights, it does not expose the Government to the abuses incident to its connexion with trade. Under this system the friendly spirit of commerce and capacity for national defence would be united and displayed together, the national power strengthened without pride, national wealth augmented without hazard, and the ties of interest, the exchange of commodities, and the interchange of opinions—those great means of binding together the great family of nations, and advancing the civilization and happiness of mankind—multiplied and increased without derogating from the dignity and true theory of our Government.

From these and numerous other considerations of like nature, your memorialists humbly conceive that their proposed enterprise recommends itself to the approbation and encouragement of the Government on the following grounds, to wit: 1st. Economy and pecuniary saving to the Government in supplying a certain and available means of national defence always at hand; 2d. As a cheap, regular, and rapid medium of communicating intelligence by post between the United States and the most populous and wealthy nations of the earth; 3d. As a means of enabling our people to realize fully the great advantages acquired by their new possessions on the Pacific coast; 4th. As a means of opening new and most desirable markets for the surplus products of our people, of building up the commercial wealth and prosperity of the country, and establishing the maritime supremacy of the United States over the richest and most valuable commerce of the world, and 5th. As an auxiliary in diverting the commerce between Europe and the Oriental countries into its nearest and most natural channel, thus making our country the thoroughfare for the great part of the trade and travel between the principal commercial nations of the Old World.

Your memorialists, therefore, respectfully pray your honorable bodies to empower and direct the Secretary of the Navy to enter into a contract with your memorialists, on the terms of the foregoing propositions, for the establishment of a line of mail steamers from California or Oregon to China, for the term above mentioned, provided your memorialists shall, in all respects, comply therewith on their part.

JAMES B. MOORE,
JOSIAH LAWRENCE,
HENRY H. GOODMAN,
JOHN H. DIEHL,
And associates.

November, 1851.

COMMERCIAL STATISTICS.

COMMERCE OF CHICAGO.

We obtain the following Statistics of the commerce, manufactures, and population of Chicago, for the year 1851, from the "*Daily Tribune.*"

Table showing some of the leading articles of import at Chicago, and the amount of each article by lake, canal and railroad, respectively, for the year 1851:

RECEIPTS.

	Lake.	Canal.	Railroad.	Total.
Bacon, lbs.	....	434,716	....	432,716
Barley, bushels	12,331	262	23,518	36,111
Beef, bbls	....	1,571	....	1,571
Beeswax, lbs.	....	420,738	....	420,738
Broom, lbs.	....	11,511	....	11,511
Broom, Brush, lbs.	....	430,738	....	430,738
Buffalo Robes, lbs	....	512,196	....	512,196
Butter, lbs.	....	37,693	334,523	372,216
Candles, lbs	....	43,954		43,954
Cattle, No.	....	....	221	221
Car Axles, lbs.	57,500	....	....	57,500
Car Wheels, lbs.	290,000	....	....	290,000
Coals, tons	30·000	3,699	....	33,699
Coffee, bags.	11,316	1,795	....	13,111
Corn, bush.	....	2,352,362	295,003	2,647.365
Eggs, lbs.	....	28,000	....	28,000
Feathers, lbs.	....	14,786	....	14.786
Fish, bbls.	3,755	13	....	3,768
do. boxes	601	....	....	601
do. casks	75	....	....	75
Flour, bbls.	6,630	5,819	39,203	51,652
Fruit, bbls	9,836	1,172	....	11,008
Furs and Peltries, lbs.	....	82,993	....	82,993
Grease, lbs.	....	93,668	....	93,668
Hams, lbs	....	1,086,933	....	1,086.933
Hay, lbs.	....	787,703	....	787,703
Hemp, lbs	....	1,035,648	....	1,035,648
Hides, lbs	....	487,006	361,070	848,076
Hops, lbs.	13.900	768	....	14.668
Iron, tons.	6,800	17	....	6.817
Iron, bdls. and brs.	69,728	....	....	69,728
Lath, ps.	27,583,475	....	....	27,583,475
Lard, lbs.	....	2,069.625	....	2,069,625
Lead, lbs.	....	1,402,135	....	1,402.135
Leather, lbs.	41,567	18,229	....	59,796
Liquors, bbls.	2,992	744	1453	5,189
Locomotives,	4	....	....	4
Lumber, feet	125,056.437	466,685	....	125,523,122
Machinery, lbs.	....	106,615	....	106.615
Merchandize, lbs	15,982,753	397,916	....	16,380.669
do. pckgs.	234,987	....	....	234.987
Mill Stuffs, lbs	....	....	939,510	930,510
Molasses, hhds	450	....	....	450
do. bbls	708	1,955	....	2,663
Nails and Spikes, lbs.	44,034	4.910	....	48,944
Oats, bush.	....	181,293	152,855	334,148
Oil, bbls	510	497	....	1,007
Paper, reams	....	....	10,394	10,394

RECEIPTS.

	Lake.	Canal.	Railroad.	Total.
Passenger Cars.	3	....	.....	3
Pig Iron, tons.	641	2	.....	643
Potatoes, bush	6,320	4,797	13,778	24,895
Pork, bbls.	....	8,241	.....	8,241
Pork, lbs	....	....	2,390,248	2,390,248
Powder, pckgs	7,753	....	.....	7,753
Provisions, lbs	....	2,825	1,040,299	1,043,124
Posts,	71,724	1,500	.....	73,224
Pickets,	230,505	....	.....	230,505
Reapers,	162	....	.....	162
Salt, bbls.	115,522	120	.....	115,642
do. bags	78,414	....	.....	78,414
do. lbs	953,400	217,300	.....	1,170,700
Shot, lbs.	....	138,680	.....	138,680
Seeds, bush.	....	6,980	.....	6,980
Shingles,	60,338,250	....	.....	60,338,250
do. Bolts, cds.	1488	....	.....	1,488
Soap, lbs	....	86,634	.....	86,634
Smut Machines,	70	....	.....	70
Stoneware, galls.	33,316	....	.....	33,316
" tons	40	....	.....	40
Stone, cub. yds.	....	19,940	.....	19,940
Stoves, No.	8,742	....	.....	8,742
do. lbs	100,000	10,928	.....	110,928
Sugar, lbs	....	3,765,836	.....	3,765,836
do. hhds	2,563	....	.....	2,563
do. bbls. and bxs.	2,884	....	.....	2,884
Sundries, lbs.	....	25,656	1,533,030	1,558,686
Tallow, lbs.	....	41,001	.....	41,001
Timber, cub. feet.	410,679	152,297	.....	562,976
Tobacco, lbs.	....	324,923	.....	324,923
Wagons, No.	198	34	.....	232
Wheat, bush.	26,084	67,972	274,021	368,077
White Lead, lbs	....	204,837	.....	204,837
Wood, cords	5,924	10,676	454	17,054
Wool, lbs	....	520,026	211,930	731,956

TRADE WITH CANADA.—The value of articles imported into Chicago from Canada, during the year 1851, is $5,811,14. And the total amount of duties collected at this port, on foreign merchandise, during the year, was $2,353,23. The value of exports to Canada, during the same time, was $116,185,51.

The arrivals from Canada were 7, and the clearances 13.

SHIPMENTS FOR THE YEAR 1851.

	Lake.	Canal.	Railroad.	Total.
Agricult. Implements, lbs.	.....	1,164,583	.....	1,164,583
Barley, bushel	8,537	11,460	.....	19,997
Beans, bush	400	1,569	.....	1,969
Barrels, No.	.....	797	3,082	3,879
Bagging, lbs.	.....	5,845	.....	5,845

SHIPMENTS IN THE YEAR 1851.

	Lake.	Canal.	Railroad.	Total.
Beef, bbls	49,306	135	.....	49,441
do. tcs	2,829	.....	.....	2,829
Beeswax, lbs	1,447	.....	.....	1,447
Butter, lbs	10,424	75,117	.....	85,541
do. kegs	604	.....	.....	604
Brooms, doz	633	98	.....	731
Broom, Brush, lbs	802,042	.....	.....	802,042
Buffalo Robes, lbs	7,215	.....	.....	7,215
Candles, lbs	14,800	16,280	.....	31,080
Castings, tons	5	.....	.....	5
Cattle, No	448	.....	.....	448
Carpenters' work	.....	197,647	.....	197,647
Cheese, lbs	2,215	178,737	.....	180,952
Cider, bbls	.....	144	.....	144
Coal, lbs	.....	1,182,803	909,749	2,092,552
Coffee, lbs	.....	205,310	.....	205,310
Corn, bush	3,221,317	.....	.....	3,221,317
Corn Meal, scks	150	.....	.....	150
Cordage lbs	.....	7,950	.....	7,950
Clocks, lbs	.....	116,415	.....	116,415
Eggs, bbls	149	.....	.....	149
Feathers, lbs	8,473	.....	.....	8,473
Fish, bbls	46	3,175	.....	3,221
Furs and Peltries, pckgs	5,645	.....	.....	5,645
Furniture, lbs	.....	1,078,423	17,624	1,096,047
Flour, bbls	71,723	683	.....	72,406
Fruit, bbls	380	.....	.....	380
do. lbs	.....	230,536	.....	230,536
Grindstones, lbs	.....	187,334	.....	187,334
Hams, bbls	1,934	.....	.....	1,934
do. casks	688	.....	.....	688
do. hhds	112	.....	.....	112
do. lbs	1,354	700	.....	2,054
do. No	3,690	.....	.....	3,690
Hay, tons	253	.....	.....	253
Hemp, lbs	694,783	.....	.....	694,783
Hides, No	31,617	40	.....	31,657
High Wines, bbls	1,878	.....	.....	1,878
Hops, lbs	.....	17,539	.....	17,539
Horns and Bones, lbs	.....	80,000	.....	80,000
do. do. bbls	183	.....	.....	183
Iron, lbs	132,480	1,035,579	2,286,010	3,454,069
do. bdls	119	.....	.....	119
Lard, lbs	259,647	.....	.....	259,647
do. bbls	9,057	.....	.....	9,057
Lath, ps	.....	12,785,285	2,136,135	14,921,420

SHIPMENTS FOR THE YEAR 1851.

	Lake.	Canal.	Railroad.	Total.
Lead, lbs.	1,375,872	1,007	.....	1,376,879
Leather, lbs.	33,875	239,664	.....	273,539
Liquor, bbls.	1,515	1,755	.....	3,270
Lumber, feet	.....	54,186,745	13,770,542	67957,287
Marble, lbs.	.....	845,310	.....	845,310
Machinery, lbs.	.....	273,044	.....	273,044
Merchandize, lbs.	840,890	13,127,352	17,017,355	30985,597
do. pckgs.	16,571	.....	.....	16,571
Molasses, lbs.	62,000	80,336	.....	142,336
Nails and Spikes,	.....	424,312	.....	424,312
Oats, bushel	767,089	108	.....	767,197
Oil, bbls.	78	193	.....	271
Oranges, boxes	150	.....	.....	150
Paint, lbs	.....	31,024	.....	31,024
Potatoes, bush.	2,000	13,300	.....	15,300
Pots and Pearl Ashes	.....	114,366	8,000	122,366
Pork, bbls.	19,188	27	.....	19,215
do. tcs.	489	.....	.....	489
Provisions, bbls.	600	.....	.....	600
Powder, lbs.	.....	159,425	.....	159,425
Pumps, lbs.	.....	168,390	.....	168,390
Rags, lbs.	8,656	.....	.....	8,656
Rice,, lbs.	.....	10,111	.....	10,111
Reapers, No	552	.....	.....	552
Salt, bbls.	3,581	35,086	9,970	48,637
do. sacks	391	.....	.....	391
do. lbs.	.....	481,803	.....	481,803
Sacks, No.	.....	14,432	.....	14,432
Saleratus, lbs.	.....	164,529	.....	164,529
do. boxes	57	.....	.....	57
Seeds, bushel	.....	530	.....	530
Seed Drills, No.	18	.....	.....	18
Scales, lbs.	.....	65,739	.....	65,739
Soap, lbs.	.....	15,845	.....	15,845
Shot, lbs.	21,110	975	.....	22,085
Shingles, No.	.....	51,641,100	8,269,500	59910,600
Shingle Bolts, cds.	.....	427	.....	427
Shoulders, bbls	1,020	.....	.....	1,020
do. hhds.	360	.....	.....	360
do. No.	9,797	.....	.....	9,797
Sheep Pelts, No.	263	.....	.....	263
Starch, lbs.	26,600	4,499	.....	31,099
Staves, No.	.....	9,900	.....	9,900
Steel, lbs.	36,000	63,846	.....	99,846
Sugar, lbs	.....	344,312	.....	344,312
do. hhds.	20	.....	.....	20

SHIPMENTS FOR THE YEAR 1851.

	Lake.	Canal.	Railroad.	Total.
Sugar, bbls	619	.....	.....	619
Sundries, lbs	.....	24,912	.....	24,912
Stucco, bbls.	35	.....	.....	35
Steam Engines, No.	15	.....	.....	15
Stv's and H. Ware, lbs	28,500	1,849,327	.....	1,877,827
Tallow, bbls.	3,424	.....	.....	3,424
do. lbs	57,177	3,825	.....	61,002
Tar, Pitch &c., lbs	.....	15,873	.....	15,873
Timothy Seed, bbls	1,670	.....	.....	1,670
Tan Bark, tons	.....	178	.....	178
Timber, cubic feet	.....	7,846	.....	7,846
Tin, lbs	.....	99,275	.....	99,275
Tobacco, lbs	182,758	22,988	.....	205,746
Tongues, bbls	126	.....	.....	126
Trees and shrubs, lbs	.....	37,866	.....	37,866
Turpentine, bbls.	.....	32	.....	32
Vinegar, bbls	.....	141	.....	141
Wagons, No.	35	515	.....	550
Water Lime, bbls.	30	.....	.....	30
Wheat, bush	436,808	852	.....	437,660
Wool, lbs	1,086,944	1,609	.....	1,088,553
Wooden Ware, lbs	.....	3,380	.....	3,380

A TABLE of the value of imports and exports from 1836 to 1848 inclusive.

	Imports.	Exports.
1836,	$325,203 90	$1,000 64
1837,	373,677 12	11,665 00
1838,	579,174 61	16,044 75
1839,	630,980 26	33,843 00
1840,	562,106 20	228,635 74
1841,	564,347 88	348,862 24
1842,	664,347 88	659,305 20
1843,	974,849 75	682,210 85
1844,	1,686,416 00	785,504 23
1845,	2,043,445 73	1,543,519 85
1846,	2,027,150 00	1,813,468 00
1847,	2,641,852 52	2,296,299 00
1848,	8,338,639 86	10,709,333 40

In reference to the foregoing table, we find the following remarks:

"The increase of imports and exports in 1848 over those of 1847 was not as great as appears from the above figures. The prices at which various articles for the latter year were estimated, are altogether too large. For example: The exports of wheat amounted to 2,160,000 bushels, and its value is set down at $2,095,000—almost $1.00 per bushel. A truer average of the value of spring and winter wheat, for that year, would have been about 60 or 65 cents per bushel. Again the valuation of machinery, turned out by our manufacturers that year, is put down at $1,060,262; that of furniture at $649,326—of wagons at $302,-104. When we take into consideration the increase which has taken place in each of the above branches of manufacture, in our city, since 1848, and compare these figures for that year with those for 1851, which will be found under their appropriate head in this article, the conclusion must be inevitable that the former were overruled.

FLOUR TRADE.

The total amount of flour handled at this place during the year 1851, was 111,983 barrels, and was received from the following sources:

By Chicago and Galena Railroad	39,203	barrels.
By Lake	6,630	"
By Canal	5,819	"
Manufactured in the city	60,331	"
Total	111,983	"

The shipments were as follows:

To Buffalo,	54,889	barrels.
To Ogdensburgh,	3,642	"
To Dunkirk,	238	"
To Canada,	20	"
To Lumber Country and coastwise,	12,934	"
By Canal,	683	"
Total	72,406	"

The shipments of flour from this port for a series of years were

1844,	6,320	barrels.
1845,	13,752	"
1846,	28,045	"
1847,	32,538	"
1848,	45,200	"
1849,	51,309	"
1850,	100,871	"
1851,	72,406	"

In 1850, it will be remembered that in consequence of a short crop, south of us, prices of wheat and flour ruled very high in St. Louis, and that a considerable portion of the stock in hands of dealers in this city, on the opening of navigation, was shipped to that destination. Of the shipments of flour in 1850, 66,432 bbls. were by lake, and 34,439 bbls. by canal.

During the year 1851, prices were very uniform, as will be seen by the following table of quotations, on the first of each month. The lower figures are for inferior country, and the higher are for best city brands:

January,	2,75@4,50	July,	3,00@4,25
February,	2,75@4,50	August,	2,25@4,25
March,	3,00@5,00	September,	2,25@4,25
April,	3,00@4,50	October,	2,25@3,75
May,	3,00@4,25	November,	2,25@3,75
June,	3,00@4,25	December,	2,25@3,75

THE WHEAT TRADE.

We have already stated that in consequence of partial failures of the wheat crop, since 1848, and from the fact that our farmers are paying more attention to other products, this branch of our produce trade has materially fallen off. Our figures for 1851 will show that that year was not an exception in this respect. The following will show the amount of wheat received during the year, and the several sources of supply:

From teams	379,753	bushels.
From Galena & Chicago Railroad	274,020	"
From Canal	67,972	"
From Lake	26,084	"
Total	747,829	"

The shipments of the year foot up as follows:

To Buffalo,	298,000	bushels.
To Oswego,	100,000	"
To Canada,	17,320	"
To Ogdensburgh,	3,000	"
Other Ports,	9,500	"
Total	427,820	

It will be seen from the above figures that only 67,972 bushels wheat arrived by canal, the greater part of which amount was from points on the canal. Perhaps not more than 20,000 bushels came through from the Illinois river. Throughout the season, prices ruled too high in St. Louis for Chicago operators to compete with dealers from that market. The little that came through was for the mills of the city, and was taken at a price that shippers could not afford to pay. 964,134 bushels were shipped during the sea-

son from the Illinois river to St. Louis. The year previous 95,193 bushels were shipped from Chicago to St. Louis,—while in 1849 about 500,000 bushels came through from the Illinois river to Chicago. These facts show that the grain trade of that river will come to Chicago or go to St. Louis, as prices may rule relatively high at the North or South; and since a single penny per bushel may be sufficient, when there is nearly an equipoise between the two, to turn the scale either way, the whole subject commends itself forcibly to those who have the power of regulating tolls upon the Illinois and Michigan Canal.

The following table shows the range of winter and spring wheat in this market on the first of each month during the year:

	Winter.	Spring.
January,	65 @ 77	50 @ 60
February	58 " 72	50 " 57
March,	59 " 71	53 " 58
April,	65 " 67	51 " 56
May,	58 " 70	50 " 55
June,	60 " 72	42 " 58
July,	60 " 77	41 " 52
August,	65 " 77	33 " 41
September,	62½ " 73	30 " 50
October,	50 " 63	30 " 44
November,	50 " 85	30 " 50
December,	50 " 66	30 " 45

The highest figures, both for winter and spring wheat, were only paid for very superior samples by the mills.

The following table shows the shipments of wheat from this port, for ten years:

1842,	586,907	1847,	1,974,304
1843,	628,967	1848,	2,160,000
1844,	891,894	1849,	1,936,264
1845,	956,860	1850,	883,644
1846,	1,459,594	1851,	427,820

THE CORN TRADE.

In this article of export, Chicago stands far ahead of every other lake city west of Buffalo. Of the entire quantity received at the last named place (5,988,775 bushels) during the year 1851, 2,957,303 bushels were from this port. The following table shows the receipts for the year and the sources of supply:

Received from Canal,	2,352,362	bushels.
" " G. & C. Railroad	295,103	"
" " Teams,	688,852	"
Total,	3,336,317	"

It will be seen that more than two thirds of the entire amount was received by canal, a very large proportion of which (probably 2,000,000 bushels) was from the Illinois river. The superior facilities which we enjoy for receiving and forwarding grain, the less expense of storage, reshipment and commissions, compared with St. Louis, give us quite an advantage over the latter market, in competing for the grain trade of the Illinois river. Although during a portion of the year, corn ruled a shade higher in St. Louis than in Chicago, nevertheless the result shows that a little more than two thirds of the surplus on the river came to our market. The entire receipts of the year at St. Louis were 1,840,909 bushels, over half of which, we estimate, was from the Illinois river. A reduction of tolls, equivalent to one tenth of a mill per mile, or one cent per bushel, for the entire length of the canal, would have doubtless brought a very large proportion of the additional 900,000 bushels to our market. For the purpose of bringing this subject more particularly to the attention of the Canal Trustees and our business men, we subjoin a statement of the monthly price of corn, during the year, in the two markets.

	Chicago.	St. Louis.
January,	34 @ 35	44 @ 48
February,	35 " 36	41 " 46
March,	36½ " 37½	35 " 40
April,	36 " 36½	35 " 40
May,	35 " 36	34 " 38
June,	36½ " 36¾	33 " 36
July,	36 " 36½	38 " 43
August,	30 " 32	35 " 40
September,	35 " 36½	35 " 38
October,	36 " 37	35 " 40
November,	30 " 32¼	31 " 36
December,	29 " 30	36 " 40

The figures for the Chicago market indicate the price of corn, in bulk, delivered on board vessels for shipment, which delivery costs the seller from half to one cent per bushel; those for St. Louis, show the rates, in gunny bags, delivered in store, by the seller.

The following table shows the shipments from this port during the year, and the amount to each destination:

Shipped to Buffalo,	2,957,303	bushels.
" Oswego,	167,314	"
" Canada,	42,643	"
" Ogdensburgh,	27,607	"
Lumber country and other ports,	26,450	"
Total	3,221,317	"

The following table shows the shipments for a series of years:

1847,	67,315	bushels.
1848,	550,460	"
1849,	644,848	"
1850,	262,013	"
1851,	3,221,317	"

THE BEEF TRADE.

Total number slaughtered in 1851,.....21,806.

Aside from the beef slaughtered and packed in the city, no very large amount comes to this market. In 1849—246 bbls. were received by canal; in 1850—773 bbls; and in 1851—1571 bbls. These comprise the total receipts of barrel beef for the years named. The shipments of beef from this point, during the year 1851, were as follows:

To Buffalo,	33,437 bbls.	2,475 tcs.
To Dunkirk,	6,798	——
To Ogdensburgh,	5,938	354
To Lumber country & coastwise,	3,125	——
To Canada,	8	——
By Canal,	135	——
Total,	90,441	2,829

The following table shows the shipments for a series of years:

1848,	19,733	——
1849,	48,436	——
1850,	36,000	3,247 tcs.
1851,	49,441	2,829

Commencing with the packing season, the price of cattle at the commencement of each month, until the close of the year, was as follows:

September,	$3,00@3,75	November,	$3,00@3,50
October,	3,00@4,00	December,	3,00@3,75

The above figures may be regarded as the range of the cattle market, throughout the season, though for some choice lots of very fat, heavy cattle, higher rates were paid.

THE PORK TRADE.

During the winter of 1850—'51, the whole number of hogs cut in this city was 22,036, giving a total weight of 5,247,278 lbs., being an average of 238½ lbs. per hog. As regards the business of the present winter, which will not be closed until sometime in March, there is a diversity of opinion, though our belief is, that it will not vary much from the last, in the number of hogs cut, while there will be an increase of weight.

During the season of 1850—'51, there were received from various sources as follows:

	Uncut Hogs. lbs.	Pork. lbs.	Hams. lbs.	Bacon. lbs.
From Canal	——	8,241	1,086,933	432,716
From Railroad	731,533	616	——	——
From teams & Drovers	4,515,745	——	——	——
Total	5,247,278	8,857	1,086,933	432,716

The above statement includes no portion of hogs, by teams, which were purchased by city butchers and family grocers.

The shipments during the year, reduced to barrels and casks, have been as follows:

PORK.

To Buffalo,	10,719 bbls.	489 casks.
To Canada,	3,656	——
To Dunkirk,	1,065	——
To Ogdensburgh,	400	——
To Oswego,	65	——
To Lumber country & o. p.	3,325	——
By Canal,	27	——
Total,	19,257	489

HAMS AND SHOULDERS.

	Hams		Shoulders.	
	bbls.	casks.	bbls.	casks.
To Buffalo,	1,934	790	591	360
To Canada,	247	——	74	——
By Canal,	7	——	——	——
Total,	2,183	790	665	360

The price of Mess Pork, Hams and Shoulders in this market on the first of each month during the year, was as follows:

	Mess Pork.	Hams.	Shoulders.
January,	12,00	——	——
February,	10,50@12,00	——	——
March,	10,50@12,00	——	——
April,	11,50@12,00	——	——
May,	14,00	8c	6c.
June,	14,00@14,50	8 @8½c.	5¾@6c.
July,	14,00	8½@ 9c.	6c.
August,	13,50–14,00	8—8½c.	5½@6c.
September,	13,50–14,00	8—8½c.	6@7c.
October,	16,50–17,00	9—9½c.	7—7½c.
November,	16,00–16,50	9—9½c.	7—7½c.
December,	13,00–14,00	9—9½c.	7—7½c.

The entire shipment of pork from this port for three years, has been as follows:

1849, . . .	17,940 bbls.
1850, ...	16,598 "
1851, . . .	19,990 "

THE WOOL TRADE.

The receipts of this article show a steady increase; and the high prices which have ruled during the last two years, together with the success which has attended almost every attempt to introduce the better breeds of sheep upon our prairies, will doubtless induce a much larger number to engage in the business of wool growing.

The following table shows the amount which came forward during the last year:

From Canal, ...	520,026 lbs.
" Galena and Chicago Railroad,	211,930 "
" Teams, ...	356,597 "
Total.	1,088,553 "

Prices ranged during the season the article was in market as follows:

June, . . .	25—40	September, . .	25—35
July, . . .	28—40	October, . .	20—35
August, . .	28—35		

The following shows the extent of the wool trade of Chicago, each year, for the last ten years:

1842,	lbs. 1,500	1847,	lbs. 411,488
1843,	22,050	1848,	estimated 500,000
1844,	96,635	1849,	520,242
1845,	216,616	1850,	913,862
1846,	281,222	1851,	1,088,553

THE LUMBER TRADE.

In 1849, the amount shipped by canal was:

Boards,	ft. 25,773,000	Shingles,	No. 26,560,000
Lath,	No. 7,984,000		

For the years 1850 and 1851, we have taken the pains to ascertain what proportion of the lumber shipped by canal, reached the Illinois river. The following tables show the total shipment, and the amount which went through.

		Total shipments.	Rec'd Ill. River.
		1850.	
Boards,	ft.	38,388,313	32,745,703
Shingles,	No.	40,453,250	38,271,170
Lath,		11,208,170	10,033,370
		1851.	
Boards,	ft.	54,186,745	44,631,372
Shingles,	No.	51,641,000	47,695,500
Lath,		12,785,285	11,428,865

Turning from our trade with the canal and river to the general trade of the city, we find the total receipts of lumber at this point for the year 1851 to be as follows:

Boards	ft.	125,056,437
Shingles	No.	60,338,250
Lath		27,583,475
Pickets		230,505
Shingle Bolts, cds. (7000 per cord)		1,488
Cedar Posts		71,724
Hewn timber	ft.	410,679

The receipts of boards, shingles and lath at this port from 1847 to 1851 inclusive, have been as follows:

	Boards.	Shingles.	Laths.
1847	32.118.225	12.148.500	5.655.700
1848	60.009.250	20.000.000	10.025.109
1849	73.269.553	39.057.750	19.281.733
1850	100.364.797	55.423.750	19.890.700
1851	125.056.437	60.338.250	27.583.475

SHIPPING.

Table showing the monthly arrival of vessels at the port of Chicago, and the number of each kind:

	Steamers.	Prop's.	Schoon's.	Brigs.	Barks.	Total.
March	25	—	10	—	—	35
April	63	11	138	10	1	223
May	95	23	173	42	2	335
June	81	29	197	36	1	344
July	83	24	197	36	3	343
August	86	27	133	33	1	280
September	82	26	128	34	1	271
October	88	21	109	21	2	241
November	57	20	92	22	1	192
December	2	2	15	5	–	24
Total	662	183	1.192	239	12	2.288

Table showing the tonnage that arrived in this port for each month during the season of navigation in 1851:

March	24.500	August	128.400
April	92.100	September	120.400
May	143.100	October	116.500
June	135.100	November	84.700
July	133.700	December	7.100

Total tonnage for the season 985,600.

The above tables, it must be borne in mind, are derived from the books of the Collector, and are short of the truth by from ten to twenty per cent. in consequence of masters of vessels neglecting to enter their arrivals.

MANUFACTURES.

	Capital.	Sales 1851.	Material.	Hands
Foundry & Machine shops	$180.500	$241.900	$98.900	291
Agricultural Implements	359.000	390.250	100.000	267
Cabinet Making	72.000	134.600	36.500	176
Mills	155.000	——	——	40
Tanneries	180.000	240.000	99.267	159
Planing Mills	60.000	——	——	55
Carriage Making	30.500	46.700	14.000	83
Brass and Bell Founders	22.500	43.000	14.500	38
Lard Oil, Candles, &c.	125.000	235.375	——	80
Cooperage	16.500	38.500	19.000	56
Marble Shops, &c.	15.500	28.000	12.500	44
Tobacco, Segars, &c.	47.000	63.000	——	56
Ice	10.000	——	——	40
Brick Making	30.000	70.000	——	215
Total	$1.304.500	1.326.225	394.667	1.600

In the above list we have not included the manufacture of boots and shoes, harness, trunks, clothing, plumbing, gas fitting, sheet, tin and copper ware, pump making, black-smithing, silver and gold-smithing and plating, and a variety of other branches of manufacturing. We have given sufficient, however, to enable the reader, at a distance, to form a pretty correct idea of the extent to which these various branches of industry are engaged in.

There are 4 flouring mills ; quantity of flour manufactured in 1851, 60.000 bbls. There are 10 foundries and machine shops; 9 establishments for the manufacture of agricultural implements ; 10 Cabinet shops; 5 tanneries; 3 planing mills &c.

POPULATION.

The first census returns of the city which we have been able to procure are for the year 1840. In the years 1841, 1842, 1844, and 1851, no census was taken. The following are the returns for the other years:

1840	4.479	1847 . .	16.859
1843	7.580	1848 . .	20.023
1845	12.088	1849 . .	23.047
1846	14.169	1850 . .	28.269

The census of 1850 was taken by the U. S. Marshal, on the 1st day of June, and shows an increase from August of the previous year, of 5,222. If the ratio of increase has not fallen off since then—and our best informed citizens are of opinion that it has increased—the population of Chicago on the 1st day of January, 1852, was a little over 40,000.

VALUE OF PROPERTY.—In 1839 the total valuation of property in Chicago was $236,842. In 1851 the books of the Assessor show a valuation of $8,562,717—of which $6,804,262 was Real estate.

REPORT

OF THE SECRETARY OF THE TREASURY ON THE STATE OF THE FINANCES.

January 6, 1852.

The Secretary of the Treasury reports:

RECEIPTS AND EXPENDITURES.

The receipts for the fiscal year ending June 30, 1851, were—

From customs	$49,017,567 92
From public lands	2,352,305 30
From miscellaneous sources	943,106 65
	52,312,979 87
Add balance in the treasury July 1, 1850 .	6,604,544 49
Total means	58,917,524 36
The expenditures for the same fiscal year were	48,005,878 68
Leaving a balance in the treasury July 1, 1851, of	10,911,645 68

ESTIMATES.

The estimated receipts and expenditures for the fiscal year ending June 30, 1852, are:

Receipts from customs, 1st quarter, by actual returns	$14,754,909 84	
Receipts from customs, second, third and fourth quarter, as estimated. . . .	34,245,090 66	
		$49,000,000 00
Receipts from lands		2,100,000 00
Receipts from miscellaneous sources . .		400,000 00
		51,500,000 00
Add balance in the treasury July 1, 1851 .		10,911,645 68
Total means		62,411,645 68

EXPENDITURES, VIZ:

The actual expenditures for the quarter ending September 30, 1851, were . . .	$10,937,586 31	
(As appears by accompanying statement B.)		
The estimated expenditures during the other three quarters, from 1. October, 1851, to June 30, 1852, are:		
Civil list, foreign intercourse, and miscellaneous . . .	12,380,980 75	
Expenses of collecting the revenue from customs . . .	1,500,000 00	
Expenses of collecting the revenue from lands . . .	137,409 88	
Army proper, &c. . .	6,308,042 88	
Fortifications, ordnance, arming militia, &c. . . .	1,675,979 02	
Internal improvements, &c, .	167,457 43	
Indian department . .	2,631,647 18	
Pensions	1,661,503 15	
Naval establishment, including drydocks and ocean steam-mail contracts. . . .	7,659,129 50	
Interest on the public debt .	4,003,690 70	
Purchase of stock of the loan of 1847	1,889,475 79	
		$50,952,902 59
Leaving an estimated balance in the treasury, July 1, 1852, of		11,458,743 09
The estimated receipts for the fiscal year, commencing July 1, 1852, and ending June 30, 1853, are:		
From customs		$49,000,000 00
From public lands		2,500,000 00
From miscellaneous sources		300,000 00
Total estimated receipts		51,800,000 00
Add estimated balance in the treasury July 1, 1852		11,458,743 09
Total means as estimated . .		63,258,743 09

The expenditures for the same period, as estimated by the several Departments—of State, Treasury, Interior, War, and Navy, and Postmaster General, are:

Balances of former appropriations which will be required to be expended this year . .	$3,742,214 69
Permanent and indefinite appropriations. .	9,892,550 84
Specific appropriations asked for this year .	29,257,533 66
	42,892,299 19

This sum is composed of the following particulars, viz:

Civil list, foreign intercourse, and miscellaneous . . .	$9,923,952 69
Expenses of collecting revenue from customs . . .	2,000,000 00
Expenses of collecting revenue from lands . . .	184,620 00
Army proper, &c. . .	8,571,068 06
Fortifications, ordnance, arming militia, &c. . . .	1,799,078 00
Internal improvements, &c. .	1,494,603 81
Indian department . .	1,206,530 32
Pensions	2,433,771 97
Naval establishment, including dry-docks and ocean steam mail contracts. . . .	10,473,983 64
Interest on public debt . .	3,879,690 70
Purchase of stock of the loan of 1847	925,000 00
	42,892,299 19

Leaving an estimated balance in the treasury July 1, 1853, of $20,366,443 00

The total receipts from all sources for the last fiscal year amounted to $52,312,979 87, which, with the balance in the treasury on the 1st of July, 1850, of $6,604,544 49, gave, as the total available means for the year ending 30th June last, the sum of $58,917,524 36; of this amount $49,017,567 92 were received from customs.

The receipts for the quarter ending 30th September last were $15,561,511 83, of which $14,754,909 34 were from customs; for the corresponding quarter of the previous year the customs yielded the gross sum of $14,764,043 05. It is presumed that the receipts for the three remaining quarters of the current fiscal year will not exceed those of the corresponding quarters of the last year, and hence the receipts from that source have been estimated at $49,000,000 00.

The estimated total receipts for the current fiscal year amount to $51,500,000. The total expenditures are estimated at $50,952,902 59. Total receipts for the next fiscal year are estimated at $51,800,000.

In order to present the various objects of expenditure to Congress in the most distinct manner possible, I have caused the estimates for the next fiscal year to be prepared with such view, and therefore the amounts required for the usual and long established wants of the Government have been separated from such as are deemed necessary for the protection and welfare of our newly acquired territories, and demanded in the fulfilment of our obligations, express or implied, in connexion therewith.

It need scarcely be stated that a large proportion of the increased expenditures of the Government in times of profound peace are consequent upon the acquisition of our new territories. The estimates for those territories, in addition to the otherwise ordinary wants of the Government, are deemed essential to their well-being, and are submitted with the hope that Congress will pursue a liberal course of policy towards that younger and weaker portion of our country; as it cannot be doubted that, when a permanent population shall possess them, and consequent advancement in all the elements of civilization shall be realized, they will amply repay present expenditures by permanent and powerful augmentation of the national wealth.

The expenditures for the ordinary wants of the Government for the next fiscal year are estimated at $33,343,219 07, as will appear in the detail of estimates already transmitted to Congress.

Those submitted as required by our new territoties, and in the fulfilment of our obligations consequent upon their acquisition, amount in part to $9,549,080 12, as follows:

Survey of the boundary line between the United States and Mexico	$120,000 00
Survey of the west coast	150,000 00
Dry-dock in California	360,000 00
Mileage and per diem of Senators and Representatives from California, Utah and New Mexico	26,462 40
Territorial governments of Utah and New Mexico	61,400 00
Judicial expenses, including marshals . .	77,200 00
Expenses of commission for settling land titles in California	50,000 00
Expenses of surveys in California . . .	18,500 00
Expenses of surveys and sales of public lands in California.	239,075 00
Pensions under the acts of 1848 . . .	431,240 00
Expenses of Post Office Department . .	638,250 00
Excess of expenditures of War Department in the maintenance of troops, &c., in the new territories	4,556,709 75
Interest on so much of the debt contracted in consequence of and during the late war . .	2,820,242 97
Making an aggregate of	9,549,080 12

Add for the ordinary expenses of the Government, as per printed estimates, $33,343,219 07, and we have the sum of $42,892,-299 19 as the total estimated demands upon the treasury for the next fiscal year, leaving an estimated unappropriated balance in the treasury on the 1st of July, 1853, of $20,366,443 90. This sum, it is believed, will be ample to meet the amount required on that day for the redemption of the loan of 1843, then due, of $6,-237,931 35, and such additional appropriations beyond the estimates submitted as may be made during the present and next sessions of Congress.

PUBLIC DEBT.

The public registered debt on the 30th November, 1850, was $64,228,238 37; since which period the following reductions have been made, viz:

On account of the debt of the cities of the District of Columbia, assumed by the act of 20th May, 1836	$60,000 00
On account of the old funded and unfunded debt	2,869 19
On account of the loan of 1843 . . .	230,300 00
On account of the loan of 1847 . . .	1,070,450 00
On account of Mexican indemnity stock . .	303,573 92
On account of treasury notes paid in specie .	650 00
	1,667,843 11

In addition to which, the awards under the fifteenth article of the treaty with Mexico, for which the issue of stock was authorized, amounting to $2,591,213 45, and the instalment under the twelfth article of that treaty, amounting to $3,242,400, have been paid in cash.

The public debt on the 20th ultimo, per statement C, was $62,-560,395 26, as follows, viz:

Old funded and unfunded debt, payable on presentation	$116,716 79
Debt of the District cities assumed by Congress, $60,000, payable annually . . .	840,000 00
Treasury notes issued prior to 22d July, 1846, payable or fundable on presentation . .	135,711 64
Treasury notes issued under act of 22d July, 1846, do. do.	17,550 00
Treasury notes issued under act of 28th January, 1847, do. do.	9,500 00
Loan of April 15th, 1842, due 31st December, 1862, do. do.	8,198,686 03
Loan of March 3d, 1843, due 1st July, 1853 .	6,237,931 35
Loan of July 22d, 1846, due 12th Nov., 1856	4,999,149 45
Loan of January 28th, 1847, due 1st Jan. 1868	26,265,150 00
Loan of March 31st, 1848, due 1st July, 1868	15,740,000 00
	62,560,395 26

Towns of Missouri.

Columbia and its Prospects.—Columbia is rapidly on the advance. Onward and upward is its course to a high destiny. Surrounded by fertile and attractive lands, and having about it the elements of real prosperity, our town is increasing in population, in business, in wealth, in improvements, in the means of comfort and happiness—in short in all the heathful energies of a prosperous and desirable community. Not only is it the most beautiful, but it is at the same time among the most pleasant and thriving inland villages in the western country. Those who will look up and down our streets and mark the preparations for improvements the coming season—the freshness and vigor with which the spring trade opens—the energy and spirit with which every thing is being driven forward, cannot but be impressed with the conviction that Columbia is on the advance to higher degrees of prosperity. Blessed with a healthfulness of location unrivalled in the State, and with educational, social and business advantages that are invaluable, the future is full of hope and promise.

Columbia is situated in the midst of a densely populated and exceedingly fertile region of the State, and directly on the great thoroughfare from St. Louis to the western border. The prosperity of the farmers around it, (and agriculture at last is the substratum of all other interests,) is not fictitious—is not of that character which makes a "promise to the ear and breaks it to the hope." Therefore the stranger in visiting our county in quest of a new home is not deceived by a fair exterior. A more intimate acquaintance will confirm the favorable impression at first formed of our country and town.—Try it who may and we will endorse for this result.

Columbia contains about twelve hundred inhabitants, four churches, the State University, at which there are now about one hundred and thirty-five students, two large female schools, a District School—all the pupils at the various institutions numbering in the aggregate over three hundred—nine dry goods stores with one or two soon to be opened, two drug stores with a book store combined, one jewelry and fancy store, one boot and shoe store, three carriage shops, three saddler shops, two tailor shops, one barber, two boot and shoe manufactories, one hatter shop, two cabinet shops, six blacksmith shops, two gun smiths, two taverns, one livery stable, one or more lumber-yards, one tin and stove store, one confectionary and baker, (sending around a bread wagon twice a day in regular city style,) one grocery, two carding machines, two wagon makers' shops, eight physicians, two resident dentists, nine lawyers, three or four stone cutters, several painters and paper hangers, two plasterers, a number of carpenters and last, though perhaps not least, two printing offices.

Another thing: there are in Columbia very few loafers or old bachelors. Who will not, then, agree with us that the "skies are bright" and that the bow of promise spans our heavens?

Rocheport, Boone County, Mo.—Rocheport is a beautiful and flourishing town. It contains four or five hundred inhabitants, three churches, good schools, six or eight dry goods stores, one hotel, one drug store, the largest tobacco stemmery in the upper country, several blacksmith shops, cabinet makers, tailors, saddlers, physicians, &c. The main street is McAdamized and the sidewalks are well paved.

The town occupies an advantageous position. Being near the line which divides Boone and Howard counties, within the former, and backed by as fine a farming country as any in the State, nothing can prevent the steady growth of Rocheport.

The town is situated on the north bank of the Missouri river, in ascending which stream a view of the town is obtained many miles before the traveler reaches it. Situated as this place is, on the river and at the mouth of the Moniteau creek, nature seems to have formed a gap for the discharge of its waters, and for the town site, in the continuous range of beetling cliffs of limestone. The turbid waters of the Missouri chafe the base of these cliffs above and below Rocheport, the gap extending about the distance of one mile. From the river bank, which is not high, the ground rises sufficiently to fix in the mind of the observer a strong impression of the beauty and eligibility of the location.

The town commands a large trade, because the country round about it is rich and attractive. It may not be improper in this place to notice the curiosities which are to be found in the vicinity of Rocheport. Some little distance above the town, on the face of the cliffs fronting the river, are to be seen, in a situation apparently inaccessible, Indian hieroglyphics, supposed to have had some connexion with their forms of worship. Along the banks of the Moniteau creek (named after an Indian deity) are to be found the burial grounds of the savages. Below the town we are told there is a spacious and curious cave, in which a stream of water pours over a rocky bed, forming a beautiful cascade. This cave contains many apartments and presents various objects of interest to the antiquary. Not far distant a large spring gushes out of the perpendicular rock, affording copious supplies of the clearest and best of water.

STEAM VESSELS FOR THE SANDWICH ISLANDS.

The following extracts from the "Placers' Times" show that our citizens have lost nothing of their spirit of enterprise by removing to California. And if they continue to improve their commercial facilities between that country and Asia, an extensive commerce will be established which will, in a few years, rival that between the United States and Europe.

STEAM VESSELS FOR THE SANDWICH ISLANDS.—William Glen, Esq., has made a report of the trip of the Constitution to the Sandwich Islands, which by permission of the North Pacific Steam Navigation Company, is published in the Alta. Mr. Glen writes:

"I found 3,888 tons of shipping actively and profitably engaged in the transportation of island produce, merchandise and passengers between the different ports, and it is estimated that the amount annually derived by the coasting vessels from these resources exceeds $200,000, while the establishment of a number of coffee and sugar plantations, and the consequent introduction of a large number of coolies, will have a tendency to augment the coastwise traffic to a considerable extent.

The natural peculiarities attendant upon coasting among the Islands operate in favor of the exclusive employment of steam navigation perhaps more than those of any other portion of the navigable globe, as the winds prevail to such a degree that sailing vessels require from four to six weeks in the prosecution of a voyage, which, with steam, could be accomplished regularly in four days.

In a general commercial point of view, the Islands present a somewhat gloomy aspect, produced undoubtedly by an excess of importations, combined with the comparatively low range of prices for Island produce; notwithstanding, as will be observed by the statistics for 1851, published by the Collector-General, the commerce of the Islands is increasing in a ratio almost unprecedented, the total importations during the year 1851, having amounted to $1,823,821 68, againtt $1,035,058 07 in the preceding year.

The Company at present keep but one steamer in the trade, but purpose to have two more as soon as arrangements can be effected.

ARRIVAL OF CLIPPERS AT CHINA.—QUICK PASSAGES.—The Lightning, from China, brings us intelligence of the arrival out of three of our famous clippers. The passage of the Game Cock is set down as the quickest ever made between this port and Hong Kong. She arrived on the 6th of December, in a run of only thirty-four days, bringing European intelligence of a more recent date than that received by overland express. The flying Cloud reached Hong Kong on the 3d, also in a passage of thirty-five days. The Witchcraft had also arrived.—*Alta.*

THOUGHTS FOR THE MILLION.

By Ella, of Carondelet.

Female Conversation:—For a lady to converse well is in her a great accomplishment— an act of inestimable value. It is the surest means by which she may give a tone of rational felicity to social life—by which dulness may be dissipated from the fire-side, and life and cheerfulness dispensed as from an Angel's harp! No other talent can compare with it— no other amusement is so welcome at all times. Music has charms, even magical; but music may often fail to win our thoughts from unpleasant remembrances: the theater, and ball-room, and field-sport are not always in harmony with the tone of our feelings: even our hearts grow listless over the book, whose pages speak and words burn; but never does woman's choice conversation weary on the ear! It is this that is never so charmless as not to beguile our thoughts, even from that sadness which time seems to have engrafted on the mind, or is fertile in winning memory from the imprints of adversity. — Men cannot esteem too highly the privilege that woman possesses in this ever pleasing power of enchanting ideas—the privilege to conquer, and captivate, and hold, in felicitous obeyance, their hearts and minds. Conversation is not only the surest medium of affection, consolation, amusement, and rational instruction— but it is, also, the surest means to array good sense against folly, and piety against irreligion, surely and vitally: but all this presupposes a conversation, free from sensuality, high, and intellectual: the reverse of this is sure to work an influence equally reverse. Words of affection from woman's lips, seem to be spirit-missiles thrown by a kind destiny along man's pilgrimage, to win, to ennoble, and to bless.

LITERARY NOTICES.

Hunt's Merchants' Magazine.—Having occasionally called in question the soundness of certain doctrines which have been published in this valuable work, it might, perhaps, be inferred that we were disposed to detract from its merits. Such, however, is not the case.

The author is entitled to his opinions. And although we may sometimes oppose them, we should nevertheless regard it as a serious misfortune to be deprived of the information we derive from his labors. The American people have just cause to be proud of a work which is sought for and regarded as authority in every part of the commercial world. And, as evidence of our friendship for the Editor, we take pleasure in copying the following notice from a New York paper:

"Hunt's Merchants' Magazine.—In the year 1839, and in the month of July, Mr. Freeman Hunt brought out the first number of this great work, which has been steadily growing in value, ability and magnitude, until it has now reached its 24th bound volume, and constitutes one of the most valuable collections of

commercial information that has ever been published. Probably we should not be considered as saying too much, if we placed it at the head of contributions of this kind:

"The first conception of this work was original; nothing exactly like it existed in Europe, and nothing similar to it in this country. Its object was clearly stated in the beginning, and has been faithfully adhered to in every subsequent number. It professes to give, and it has given, a clear, reliable and well written monthly report of the arts, manufactures and commerce of ancient and modern nations. While its more important object has been to communicate to the merchant all that information which he required in his business transactions, it has contained the most valuable statistical tables, in reference to the progress of commerce, and every department of domestic and foreign trade—the ablest lectures, essays, and articles which have been written in this country, on art, manufactures, banking, inventions, light-houses, coast surveys, the tariffs of all nations, the great Institutions, Insurance of Life, Health, Fire and Marine Companies:—a very able and impartial department of Book Reviews, the most enlightened dissertations upon commerce, the clearest exhibition of the commercial wealth of all nations, particularly our own, with the progress of mining and the results of geological surveys and investigations; the proceedings of chambers of commerce, and all the changes effected by governments, corporations and associations, which concerned the commercial interests of the world; early and authentic information in reference to commercial and maritime affairs in every part of the world; with still another, and very valuable department, viz.: the decision of Marine and Admiralty Courts, affecting the interests of commerce; and, in fact constituting, when taken together, the most reliable mass of information of the kind which has ever been published in any country.

"Nothing we could say, could do any thing to enhance the well established reputation of the magazine. It is circulated through every part of the world; it is taken by the leading merchants among all nations; it has been ordered in complete sets by Boards of Trade in England, and commissions appointed by the governments on the continent. It has been commended by Judges of Admiralty Tribunals, and votes of thanks from many quarters have been sent to the editor. The press has in this country, and in Europe, from the beginning, greeted every number with praise; and very few works have been published, and certainly none in this country, which are so frequently referred to as authority in high quarters.

"If Freeman Hunt had lived in England, or in France, and devoted his life so entirely to the great interests of commerce, he would have received honors and emoluments from governments, and been looked upon as a public benefactor. He is so indeed in this country, but we are not aware that our Government has yet taken the trouble to furnish even ambassadors, ministers, consuls, and other representatives, with his Magazine. In fact, the Government bestows very little attention on these things; and if our experience for many years, as one of its representatives, is a fair sample of the rest in this respect, it may be laid down as a rule, that almost the only general authority they have to rely upon in their commercial decisions is Hunt's Magazine, ordered and paid for by themselves. Without it, we should have been at a loss on very many occasions; but with it, we always felt secure that our decisions would be confirmed by the Supreme Court of the United States, and in every instance where an appeal was made, these decisions were confirmed.

"There is no man in this country who is as thoroughly familiar with the arrangements of the commercial relations of men, and of governments, as Mr. Hunt. He has, doubtless, devoted more careful attention to these matters than any other American, and the value of his services, if the Government could call them into constant requisition in Washington, could not be estimated."

ADVERTISING DEPARTMENT.

Stationery.

F. SCHUSTER & CO.—Stock of German, English, French, &c. Books, Engravings, Blank Books, Music Paper and Stationery, No. 38 Walnut street, corner of Second street, St. Louis, Mo.
August, 1851.

Trunks.

M. PENDZINSKI, Premium Trunk Maker. Constantly on hand, at wholesale and retail, and made to order at the shortest notice, Hard Leather Trunks, Solid Leather Steel Spring Trunks, Valises, Carpet Bags, Packing Trunks, Ladies' Dress Boxes, &c.
Trunks repaired in the best manner. Call and examine for yourselves before buying elsewhere, as I am determined to sell as low as any house in the trade, at all risks, No. 42 North Second street [Westside,] between Chestnut and Pine streets, May, 1851.

A. B. LATHROP. J. W. MITCHELL.
L. G. JEGFERS.
A. B. LATHROP & Co.

MANUFACTURERS and wholesale and retail dealers in TRUNKS, Valises, Carpet Bags, Umbrellas, Ladies' Satchels, Dress and Bonnet Boxes, &c.
☞Constantly on hand at *Eastern Prices* (for CASH,) the largest assortment of Packing Trunks, Canvas or Leather, suitable for packing Prints, Clothing or Fancy Articles, Boots and Shoes, &c. Also—Manufacturers of all kinds of Packing Boxes for the city trade. Depot and Office No. 60 Third street, at the "Trunk Emporium" opposite Old Theatre, St. Louis, Mo. April, 1851.

Architects.

BEN. SMITH, Surveyor and Engineer. Surveys made with accuracy and despatch in any part of the city or country; also, Maps constructed, and Plans and Estimates made for Rail, Plank and other roads. Orders respectfully solicited. Office: North-west corner Third and Chestnut streets, St. Louis.
May, 1851.

Flowers.

FLORA GARDEN.—This establishment contains a collection of Plants and Flowers not excelled perhaps by any in the United States. Of ROSES alone there are 230 varieties; and the proprietor has devoted ten years to storing his HOT-HOUSES, 420 feet in length, with specimens of rare and beautiful plants, and flowers from almost every part of the globe. The Garden is pleasantly situated on South Seventh street and affords a delightful retreat from the noise and dust of the city. A commodious SALOON has been fitted up and will be supplied with confectionary, ice creams, and other refreshments suitable to the season and the place. Spirituous liquors are excluded from the premises. Boquets of the richest flowers and most tasteful combination furnished throughout every season of the year.
April, 1851. G. GOEBEL.

Stoves.

HUDSON E. BRIDGE. HARRISON P. BRIDGE.
BRIDGE & BROTHER.

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' tools, machines, also, manufacturers of Jewett's improved Patent Cary Ploughs.

GILES F. FILLEY, Manufacturer of the celebrated pri e preminm cooking stoves; also, Irving's air tight cooking stoves, fancy box and coal stoves; dealer in tin plate, copper, sheet iron, block tin, rivets, tinner's tools, machines, &c. Warehouse No. 163 North Main street, St. Louis, Mo. Foundry on Lewis street, near the water works.

Mathematical Instruments.

J. BLATTNER, Mathematical and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 68 North Second street, between Pine and Olive, St. Louis, Mo., manufactures, and has always on hand: Surveyor's Compasses, Levelling Instruments, Theodolite Pocket Compasses, S y-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, hydrometers for acids and salts, Magic Lanterns, Electrical Machines, &c., also, Surgical and Dental Instruments; Pocket, Dissecting, Cupping and self-injecting cases; Taylor's Shears, all sizes; Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; large Scales and Weights for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flaks, Game Bags, &c. ☞All the above Instruments repaired at short notice in the best manner.

Hardware.

WILSON & BROTHERS, Wholesale Dealers in Hardware, corner of Main and Olive streets, St. Louis, Mo.

P. WONDERLY, Manufacturer of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper ettles, Well and Cistern Pumps, and every other article in his line of business, No. 233 Main street, South-east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

Hats.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.
DAVID PEARCE & CO., Manufacturers and wholesale dealers in Hats, Caps and Straw Goods, No. 1.0 Main st., St. Louis, Mo.

J. HENWOOD, Hat manufacturer, No. 72 Chestnut street, St. Louis, Mo.

Saddlery.

HEWITT & STEINACKER, Saddle, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis.

Commissions.

H. W. LEFFINGWELL, Notary Public. R. S. ELLIOTT, Com'r of Deeds.

LEFFINGWELL & ELLIOT, Real Estate Dealers, Auctioneers and Conveyancers, No. 123 Chestnut street, St. Louis, Mo. Real Estate sold on commission, at private sale, or auction. Also, deeds of all kinds written, and acknowledgments taken. Maps of the city and additions to be seen at the office, and information given free of charge. Surveying done promptly and correctly.

GENERAL AGENCY at Dubuque, Iowa, for public lands, real estate, military land warrants, payment of taxes, investigation of titles, amicable collection of debts, and all other business within the legitimate sphere of an Agent's duties, by

CHARLES CORKERY,

Notary Public and Commissioner of Deeds and Depositions for all the North-western States, Missouri included. October, 1851.

Attorneys.

GLOVER & CAMPBELL, late of Palmyra, Mo., Attorneys at Law, St. Louis, Mo.

JOHN LOUGHBOROUGH, Attorney and Counsellor at Law, office No. 56 Pine street, near Third, (adjoining that of the Clerk of the Supreme Court.

T. F. RISK & A. FALLER, Attorneys at Law, office—No. 15 North Chestnut st., (2 doors west of the Republican building,) St. Louis, Mo.

F. HEREFORD, Attorney at Law, Independence, Mo. Office over Thomas & Todd's store.

Refer to Messrs. Thomas & Todd, Smart & Hughes, Coleman & Dallam, Independence, Mo.; Hon. Wm. Scott, Hon. Thos. L. Price, George W. Hough, Jefferson City, Mo.; Tutt & Watson, M. Tarver, Esq., H. Cobb, Esq., St. Louis, Mo.

Leather.

JOHN C. MEYER, Dealer in Hides, Leather, Oils and Findings, No. 88, North Main street, St. Louis, Mo.

Furniture.

O. W. JEROME, wholesale and retail dealer and manufacturer of Cabinet Furniture, Chairs, bedsteads, &c., Nos. 44, 46 and 48, Olive street, opposite the Monroe House, St. Louis, Mo.

WM. M. HARLOW, proprietor of the St. Louis Furniture Store, manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Fashionable Goods.

THE undersigned takes the liberty of informing you that he has removed his place of business to Olive street, a few doors above Main, south side, in the Exchange Building, and three doors above Messrs. E. W. Clarke & Co's. Banking House, where he is now opening, and will continue to receive during the Spring months, a large and full assortment of the most fashionable styles of goods, in his line, for gentlemen's wear; and where he will be pleased to see his old friends and customers and their friends with them, and assure those who may favor him with their patronage, that they shall receive his personal attention and his best efforts to please. Very respectfully, your obedient servant,

J. G. SHELTON.

Dry Goods.

DOAN, KING & CO., wholesale Dry Goods dealers, 131 and 133 Main street, St. Louis. Job P. Doan, St. Louis; Wylley King, do., Richard Bigelow, New York.

CROW, McCREERY & CO., Wholesale dealers in Dry Goods, No. 71 Main street, St Louis, Mo. Wayman Crow, Phoceon R. Mc Creery, Wm. H. Barksdale, Wm. A. Hargudine, Charles D. Appleton.

WOODS, CHRISTY & CO., wholesale dealers in Dry Goods, No. 75 Main street, St. Louis, Mo. James Woods, William T. Christy, James C. Christy, Robert K. Woods.

Fruit Trees.

FRUIT TREES AND SHRUBBERY, for sale by the undersigned, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment. The Nursery and Gardens are open at all times (Sundays excepted) for the reception of visitors. Horticulturists and amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty-five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. Their prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondelet, will meet with prompt attention.

JOHN SIGERSON & BROTHERS.

Paper Warehouse.

SLIGO BOOK STORE AND PAPER WAREHOUSE.

AMOS H. SCHULTZ, No. 136, North Main street, St. Louis, opposite the Bank. Wholesale dealer in books, paper and stationery.

Banking Houses.

PAGE & BACON, Banking House No. 139 Main street, St. Louis, next door to the Bank of Missouri.

N. B. Deposits received, Drafts and Notes from all parts of the Union collected and Exchange on the East and South for sale at all times.

Also Branches of Exchange and Banking Houses at San Francisco and Sacramento Cities, California.

LOKER, RENICK & CO., bankers and exchange dealers, No. 132 Main street, west side, third door north of Vine street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased and sight exchange on the eastern cities and New Orleans for sale at the lowest rates in sums to suit purchasers.

JOHN J. ANDERSON & CO., bankers and exchange dealers on the north-west corner of Main and Olive streets, St. Louis, Mo. Interests paid to depositors, drafts and notes collected, sight and time bills purchased and exchange on the eastern cities and New Orleans for sale at the lowest rates.

L. A. BENOIST & CO., bankers and exchange dealers, No. 83 Main street, east side third door north of Olive street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased, and sight exchange on the eastern cities and New Orleans for sale, at the lowest rates, in sums to suit purchasers.

S. HASKELL. JAS. E. FRANCISCUS
J. H. BILLING.

HASKELL & CO., bankers and exchange dealers, corner of Main and Vine streets, St. Louis, Mo., buy and sell exchange on all the eastern, western and southern cities; all kinds of bank notes, and foreign gold and silver.

☞Land warrants bought and sold, and fully guaranteed.

☞Collections made in all cities, and promptly remitted for, at current rates of exchange, free of charge.

☞Interest allowed on deposits on time, or to be checked for at sight.

☞The highest price paid for Gold Dust.

Slate Yard.

JOHN M. CANNON, Slater, No. 15 and 17 South Sixth street, St. Louis, would respectfully inform the public that, having now completed his arrangements, he is prepared to make contracts for any work in his line. He has in his employ practical slaters, and is well prepared to execute in a workmanlike manner, and with dispatch, all orders entrusted to his care. He keeps constantly on hand, and for sale, Welch slate, rich tiles, sheet lead, slate flagging, slate hearths, copper, brass and iron slating nails, Rosendale cement, and all other articles pertaining to his business. He will strip from roofs zinc, sheet iron, tin, or other covering, and substitute therefor slate. Slate removed from one roof, can be used to advantage on another, which is not the case with any other roofing material. His terms are such as cannot but prove satisfactory. Apply as above.

Brushes.

FIDINGS & CO., importers of German, French and English FancyGoods, and manufacturers of all kinds of brushes, No. 47 Main street, St. Louis, Mo.

College.

JONATHAN JONES' COMMERCIAL COLLEGE, St. Louis, Mo., incorporated by the General Assembly, January 24, 1849. With full authority to "grant diplomas, award degrees, confer honors, and exercise all and singular, the privileges common to Commercial Colleges, authorized by law in other States."—Charter, Sec. 2.

Young Gentlemen wishing to prepare themselves for busine s pursuits, are respectfully invited to call during business hours and examine the mode of imparting instruction, the progress of the pupils, and the superior facilities extended to those desirous of qualifying themselves for the practical duties of the Counting House. Personal references given to above one hundred and eighty (180) Practical Accountants now in charge of Books in this city, all of whom have completed their business education in this institution.

N. B. For CIRCULARS containing information in regard to the terms, the course of instruction and all business connected with the above, call at the "Book-keeping Department," corner of Fourth and Chestnut streets, or address JONATHAN JONES, St. Louis, Mo.

Paper Hangings.

JOHN S. WATSON, (late of Wilgus & Watson) No. 54* 40' Pine street, between Second and Third, next door above the old stand of Wilgus & Watson, house, steamboat, sign and ornamental painter, grainer, glazier, whitener and paper hanger; also, dealer in all the latest styles of French and American paper hangings. He keeps constantly on hand and ready for sale mixed paints of all colors, oils, varnishes, Japan, turpentine, white lead, putty, and a large and superior assortment of French and American window glass, which will be cut to any size to suit customers.

Particular attention paid to estimating on houses or steamboats. November.

WOLF & ENGERT, importers and dealers in Paper Hangings, Colors and Fancy Papers, No. 49 South Second street, between Elm and Myrtle, St. Louis, Mo. Constantly on hand, all kinds of oil and water colors, paper-hangings, chimney screens, tester pieces, window shades, marble, marroquin, Gold and Silver paper, painters' and Dutch gold bronze, lead pencils, paint boxes, paint brushes, drawing paper, &c. April, 1850.

Records.

PERSONS wishing to obtain transcripts of records in New Madrid county, can procure them without delay by addressing the undersigned. And to avoid the inconvenience of remitting small sums, the records will be directed to George Pegrim & Co., St. Louis, who will deliver the same upon the payment of the fees. WM. MOSELEY,

Recorder of New Madrid Co., Mo.

March, 1851.

Horse Shoeing.

JOHN MULLERY, Premium Horse Shoer in the alley, opposite the Post Office, will as usual pay particular attention to the various diseases affecting the feet of horses, and will guarantee to give general satisfaction in either of the above departments.

Manufacturers.

THOMAS GREY, Blacksmith and Iron Worker, No. 90 North Second street, between Olive and Locust, St. Louis, Mo., keeps constantly on hand and manufactures to order Ox Chains, Sledges, Wedges, and every description of Mining Tools, also Iron Hobbles and Picket Pins. ☞Blacksmith work for Housebuilders, at the lowest prices. ☞He has always on hand the highly recommended Iron Frame Bedstead, and Camp Stool.

Foundry.

WASHINGTON FOUNDRY, corner of Second and Morgan streets, St. Louis, Mo. We are prepared to fill with dispatch, and to fit up in superior style, all orders in the Foundry and Machine business, such as steam engines, mill work, mill castings, railroad cars, wheels for coal trucks, lard and soap kettles of all sizes, press screws, &c., made to order at short notice. Wool carding machines, and a large and superior stock of machine cards, we will warrant equal to any in the Union.

All orders from the country will meet with prompt attention.

J. T. DOWDALL & CO.

S. J. SMITH. T. FAIRBRIDGE.
W. D. WOOD. H. B. HAWKINS.

Missouri Foundry.

FAIRBRIDGE, WOOD & CO., manufacturers of Castings, Iron Railings, Iron Window Shutters, Vaults and Doors; Plumbago Concrete Fire Proof Safes; also, Garrison's Portable Saw Mills.

Office and Warehouse No. 118 North Third street. Foundry, corner Clark Avenue and Eighth street. June, 1851.

Saws and Scales.

ST. LOUIS SAW AND SCALE FACTORY. LEE, GAGE & CO., manufacturers of every description of Saws and Scales. Factory on Broadway, North St. Louis. Office and Ware-room No. 86 Main street, up stairs.

June, 1851.

ROLIN CLARK, PHILANDER BRALEY.
JOHN RENFREW. ALEXANDER CROSIER.

EAGLE FOUNDRY AND ENGINE SHOP, North-west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, portable circular saw mills always on hand, all orders executed with fidelity and despatch.

Lithographic Establishment.

SCHAERFF & BRO., No. 71 Market street, St. Louis, Mo., are prepared to execute anything in the line of lithography; and especially, as they are in possession of the largest sized lithographic presses and stones, they are able to fill orders of the largest dimensions. They take and lithograph portraits and likenesses from daguerrotypes, engrave or lithograph show bill cards, business and visiting cards, diplomas, music, manifests, labels, facsimiles, bank notes, bank bills, bank checks, bill heads, drafts, bills of lading, maps, town plats, &c.

☞They particularly beg leave to request the special notice of the public to their crayon drawings and colored lithographs, in as much as this is the only establishment in the West, where this improved style of lithographing is practiced

Insurance.

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PUBLISHED MONTHLY.

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M. TARVER & H. COBB, Editors & Proprietors.

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L.

VOL. VIII. MAY, 1852. NO. 2.

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DEVOTED TO

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AND

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THE

WESTERN JOURNAL

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VOL. VIII. May, 1852. No. II.

ARTICLE I.

Protection of American Industry.

Hitherto, in discussing the principles of political economy, we have aimed to give direction to individual pursuits rather than to public policy. For we trusted that, if the people could be made to understand their true interests—the power being in their own hands—the policy of the Government, as a natural consequence, would conform to their wants. But the success of many important pursuits in this country depends so much upon the action of the national legislature, that it is scarcely possible to discuss any branch of public or private economy profitably without reference to the policy of that body.

There is a peculiarity in the political condition of the United States which, in our opinion, has not been sufficiently studied by the people of this country. In theory, our political independence is as complete as we could desire it to be; but we are subjected to a system of commerce which is controlled by a foreign nation. And without protection against the centralizing tendencies of that system, our condition would be little better than was that of the American colonies before the revolution. We are not yet free from the power of Great Britain. It is an abuse of terms to call a people independent when the rewards of their labor, the price of property, and the choice of pursuits are controlled by a foreign power.

We would not cut off all foreign commerce; such a step would be in violation of the laws of both natural and social economy, but we regard it as the true policy and duty of every nation to devise and estab-

lish a system of public economy calculated to develop its own natural resources, and make the rewards of labor, and the price of property independent of foreign powers. These should be regarded as cardinal points in the policy of every country.

Commerce, throughout its entire range of operations from the barter of specific articles among savage tribes to the most extended and complicated traffic between civilized nations, proceeds upon the selfish principles of man's nature. Under all its forms and refinements, it is still a *bargain* in which the parties continually look to their respective interests, each seeking to gain an advantage over the other. And hence, as a general rule, the advantages are in favor of the less needy. The capitalist is not compelled to exchange his commodities without a profit, but the wants of the operative continually urge him to bestow his labor, or part with the products of his toil upon the best terms offered.

Capital and productive skill are the chief elements of commerce, and wherever these most abound, the advantages of trade will be in favor of those who possess them. The wealth of a nation, and the comforts of its constituents, consist more especially in the variety of its products than in the amount of money produced and employed in commerce. When the production of a commodity is once established in quantity equal to the home demand, it constitutes a permanent item of national wealth, the exchanges previously required to obtain it in foreign markets are no longer needed for that purpose, and if the money price of production should even exceed that of a foreign article, it is nevertheless a national gain, provided that by reason of its production at home, the nation is not compelled to increase its imports of other commodities.

These principles were illustrated by the condition of the American colonies anterior to the revolution, and the Statesmen who formed our constitution, and gave the first direction to the policy of the Government under that instrument, seem to have appreciated the importance of our commercial as well as political independence. But their opinions and policy have been repudiated by the modern school of public economists whose chief object, as it would seem, is to establish a policy which must in time, as we believe, subject our commerce to the unqualified control of British capital. One of the leading ideas of this school is that of enriching the nation by supplying Great Britain and Europe, generally, with bread stuffs and provisions. And as one amongst other in-

ducements to Great Britain to purchase these articles, they succeeded, some years ago, in reducing the duties on iron. Now, as this article constitutes a large item in our commerce, and its utility is supposed to be understood and appreciated by every intelligent mind, we have selected it as an instance, to show how signally the friends of free trade have failed in their expectations of enriching the country by the exportation of bread stuffs and provisions.

The total value of bread stuffs and provisions exported to all countries during the year ending 30th June 1846, was $27,701,-121. The amount of exports was greatly augmented by the famine in 1847, but in 1850 it had declined to $26,051,377, and in 1851 to $21,948,651, being $5,752,470 below the amount exported in 1846, the year preceding the change in the duties on iron. In the mean time, the value of iron imported has increased from $2,838,954, the amount received during the year ending 30th June, 1846, to $9,123,862, imported during the year ending 30th June, 1851. Thus it is shown, that while we paid $7,285,908 more for iron in 1851 than in 1846, our exports of bread stuffs and provisions were $5,752,470 less. And even if we take the annual average value of exports of bread stuffs and provisions for the five years preceding 1846, it will be found that the increased value of iron imported since that period, is about $3,000,000 more than the increased value of bread stuffs and provisions exported.

The following statement extracted from the report of the Secretary of the Treasury shows at a single view the effects produced by the existing tariff upon the production and consumption of iron in this country:

The importations of bar and pig iron for the year ending 30th September, 1842, were	100,055	tons.
The estimated production in the United States for that period was	230,000	"
Making an aggregate consumption of	330,055	"
Or 40¾ pounds per head.		
In 1846, the importations were	69,625	"
And the production estimated at	765,000	"
Consumption	834,625	"
Or 92 pounds per head		
In 1848, the importations were	153,377	"
and the production	800,000	"
Consumption	953,377	"

Or 99¾ pounds per head.		
In 1849, the importations were	289,687	"
the production	650,000	"
Consumption	939,687	"
Or 95⅞ pounds per head.		
In 1850, the importations were	337,532	"
the production	564,000	"
Consumption	901,532	"
Or 86⅞ pounds per head.		
In 1851, the importations were	341,750	"
the production	413,000	"
Consumption	754,750	"
Or 69¾ pounds per head.		

It will be perceived from the foregoing statement that the production of iron in the United States has fallen off nearly one half since 1836. And consequently, about one half of the capital invested in the iron business has been lost, or is lying idle. And while the producers of bread-stuffs and provisions have gained nothing from an increase in the foreign demand, they have lost one half of their home customers, who were formerly engaged in the production of iron. It is true that the price of iron has been reduced, but it is most evident that the producers of bread-stuffs and provisions are less able to pay for it now, than when it was made at home. For it will be seen by reference to the foregoing statement that the annual consumption per head has fallen off from 99¾ pounds in 1848 to 69¾ pounds in 1851, a decline of nearly one third in three years. If our worst enemy had devised a scheme to retard the progress, and check the prosperity of the country, he could scarcely have conceived a measure more to his purpose than the tariff regulations of 1846, especially those which relate to the iron trade.

So much has been said and written touching the protection of American labor, and the opinions of men upon this subject are so completely governed by party politics, that we feel as if engaged in a hopeless undertaking when attempting to argue it before the country. We have felt convinced ever since the adoption of the present system that it was useless to oppose it by facts or arguments, until like the law of 1832, it should prostrate every department of business. Our only hope is that the friends of the present system, with the revolutionary scenes of 1840 fresh in their recol-

lections, will watch the signs which indicate the gathering storm, and avert the coming evils before it is too late to save the country from another terrible revulsion. Hence, instead of a labored discussion of the principles of free trade and protection, we shall simply aim to call attention to some of the more prominent phenomena which seem to forebode the approach of evil.

Amongst the first to be noticed, is the decline both in the production and consumption of iron; for we hold it to be true, beyond contradiction, that a continuous and permanent decline in the general use of this article affords conclusive evidence of decay in those leading pursuits upon which the prosperity and progress of a people mainly depend. The suspension of labor-saving machinery and the decay of our cotton factories, while the demand for and importation of foreign fabrics are daily augmenting, are facts calculated to startle the American mind, and lead men to inquire whether new sources of wealth have been discovered and developed sufficient to compensate the suspension of the machinery, and purchase an increased quantity of foreign goods. But the increased demand for banking facilities would seem to indicate that no such resources have been discovered. Indeed, it is evident that excessive banking is now resorted to as an expedient to supply the place of production, rather than to assist in the development of new resources.

The produce of Gold in California may sustain the present system for a season—perhaps for several years—but every expedient must fail in time if we continue to rely upon Great Britain for iron, and permit our manufactures to fall into a state of decay. If we would progress or even maintain our present condition, we must diversify our products, increase our machinery, and furnish employment for our citizens. Already the streets of our cities, towns and villages are thronged with men without employment: men whose time and labor are not only lost to themselves and the community, but who manage in some way or other to subsist without remuneration upon the substance of others. For the want of suitable employment, they are continually in danger of falling into vices ruinous to themselves and hurtful to the community. Indeed, the peace of the country, and the permanency of our institutions depend in a great degree upon the protection of American labor. It is not in the nature of an American citizen to sink into a state of hopeless pauperism. He may become idle and

vicious, but he still cherishes the hope of bettering his condition, though the means which he proposes may be of the most desperate character. Hence, if nothing better offers, he is ready to embark in an unlawful enterprise against a neighboring government and jeopardize the peace of his own country. And, desirous of change, his support may even be counted upon as certain, by the discontented and ambitious demagogue who may aspire to dissolve the Union of the States.

If America shall ever attain that glorious destiny which has been so often predicted, that destiny can only be reached by the development of her own natural resources—by the employment of Amecican artists and operatives in the production of every commodity that can be desired by a civilized people; by a more thorough diffusion of useful knowledge, and by elevating the moral standard of all classes. And we hold it to be amongst the highest duties of the General Government to promote the attainment of these objects by the use of every means placed within its power by the Constitution.

But many intelligent and good men object to the protection of American manufactures, because such protection abridges the privileges of the consumer and creates a monopoly in favor of the producer.

This objection is plausible, and to a limited degree is founded in truth. But if protection be necessary to the prosperity of the country, which we think every intelligent and unprejudiced mind must admit, the temporary inconvenience and apparent injustice incident to the introduction of a new measure should be viewed in the same light that we regard our ordinary pursuits and undertakings, which always require an expenditure of labor or capital, before we can enjoy the profits of either.

But it is only in a limited sense that protection can be regarded as a monopoly. It is a national monopoly so far as it excludes the products of foreign countries: it can only operate as an individual monopoly in favor of those who may already be engaged in producing the protected commodity until others can make arrangements to enter upon the same pursuit. And as the field of competition is left open to all, it will not be long before the profits accruing from the production of the protected article will be brought to a level with those derived from other pursuits. And in this country, with but few exceptions, permanent protection has ever been

the means of bringing the cost of producing the protected commodity below that of foreign countries.

Why, then, it is asked, if this be true, should protection be required? This is a pertinent question, and deserves a serious answer. The producing capacity of Great Britain exceeds the demand in almost every branch of manufactures as well as in mining; the buildings and machinery have been constructed and paid for, and would be valueless without employment; the operatives have been trained to their respective occupations, and would suffer for bread were their employment to cease: from these and other causes there is a constant tendency in that country to over-production; and to avoid competition in the home market, the producers ship their surplus fabrics to the United States to be sold here for such prices as they will bring. Their condition enables them to make sacrifices in the sale of a portion of their goods, and if losses are to be incurred, it is their policy to make the sacrifice in our markets where they can do us the most injury. Hence it is obvious that without protection few individuals in this country would invest their means in buildings and machinery, while so many advantages exist in favor of British manufacture. We possess every important element of wealth common to Europe, with the addition of many which do not exist on that continent; but in subjecting these elements to useful purposes, we are compelled to labor against the capital and pauperism of Great Britain. And hitherto we have contributed largely to the support of both. These burthens impede our progress: and unless we cast them off, they will most surely, in time, reduce the rewards of American labor to the British standard.

ARTICLE II.

Railroad from St. Louis to New Orleans.*

An article contained in the February number of the Western Journal, relating to Railroad connection between St. Louis and New Orleans, has been read with much attention, throughout the lower part of the valley of the Mississippi; and the suggestion will doubtless continue to engage the profound interest of the citizens of these two great commercial cities, as well as those of the vast country lying on and near the route, through which such a road must pass. It is creditable to the city of St. Louis, and an earnest of her fealty to the undivided interests of this great valley, that the suggestion originates there. And on behalf of my fellow-citizens of Louisiana, I would venture most heartily to respond to the proposition by an assurance, that as fast and as far as possible, New Orleans and Louisiana will vie with St. Louis and Missouri, and all the intermediate country, in the alacrity with which this iron chain shall be forged, linking together the destinies of the two cities.

Permit me, Messrs. Editors, in the infancy of this great enterprise, to make a suggestion, relating to the several routes, which naturally present themselves in looking over the map of the valley, and to give my own views as to which of all seems to me the most eligible.

The union of the two cities, *indirectly*, is likely very soon to occur, from Railroad enterprises already in some progress.

The New Orleans, Jackson and Nashville road will intersect the Mobile and Ohio road, at some point in North Mississippi, and the Illinois Central Railroad from Cairo to Chicago will intersect the Cincinnati and St. Louis road at some point near Vandalia. Thus the Railroad distance from New Orleans to St. Louis will not exceed 775 miles; but will be measured on no less than four distinct and independent Railroads.

If this broken connection would answer the purposes of commerce and travel, we might now commence our rejoicing, that the enterprise has so favorable a commencement, in all the several independent links of the chain.

---

* We are gratified to learn that our project of a Railroad from St. Louis to New Orleans has attracted the attention of many talented and public spirited individuals of Louisiana, and we take pleasure in submitting to the consideration of our readers the following suggestions of Professor Forshey in respect to the route west of the Mississippi river. The shortest route in respect to time is that which we most desire. There are some reasons which would induce us to cross the Mississippi at Helena, but we are wedded to no particular location, and are truly grateful to the author of the following article for his suggestions respecting the route west of the river. A gentleman of high attainments and well acquainted with the topography of Southwestern Missouri, has promised to prepare an article describing that part of the State, for publication in our next issue.—*Ed.*

But such will not be the case; for the interests of the two cities as well as those of a vast and but partly developed region of the best lands for the support of a dense population, will demand another, and an independent route, relying on the caprices of fewer States, and better adapted to commanding the highest interests of the States traversed.

The route you have indicated (or rather suggested, for I do not understand the writer as being partial to any special route) would lead from St. Louis to the Iron Mountain region, as designed some years since; and thence by way of the St. Francis valley, to reach the New Orleans and Nashville route somewhere in Mississippi.—Let us see whether this would give any advantage over the routes through Illinois, Kentucky and Tennessee.

The distances you will find nearly the same, perhaps 25 miles may be gained in distance. But the route, passing as it does from the Iron Mountain through the less fertile and productive portions of Missouri as well as Arkansas, would fail to enlist the strongest interests of either State; and the direction it would take in the State of Mississippi, would be such as to develop no new or very valuable interest; it would not, I think, meet the local support and legislative favor, likely to be accorded to great leading enterprises. Louisiana could have no direct interest in the road.—These considerations induce me to suggest a line, lying wholly west of the Mississippi river, having a length differing very little from either of those above described; but possessing the advantages of lying within the three States of Missouri, Arkansas, and Louisiana: of developing the resources of some 500 miles of the very best agricultural country; of presenting a substitute for the bad and precarious navigation of all the region traversed; and of being likely, from its prominence and extent in each State, to command the greatest legislative and individual favor.

The line I would suggest, in the absence of surveys, but from a tolerably good personal knowledge of two-thirds of the whole line, would commence at St. Louis, pass thence to the East of the Iron Mountain; thence southwardly between the waters of the St. Francis river, and the Big Black Bayou, probably crossing this stream in the upper part of Wayne county, Mo., and again in the southern part of Randolph county, Ark.; then it would run south along the valley of the Cache on either side, as the grounds might indicate, and reach White River at Rock Roe. Crossing White river at Rock Roe, the point at which it is proposed to cross the great western road from the Mississipi river through Arkansas,—the line would cross the Arkansas river at or near the mouth of Bayou Meter, thirty miles below Pine Bluffs; and pursuing a line nearly due south, would cross the Bayou Bartholomew at the northern line of Desha county, Ark., and again in Moorhouse Parish, La.; cross the Ouachita at Monroe, where the great route

from the Mississippi river to Shreveport and Texas is proposed to cross the river. From thence it would pass down near the Castor and cross Little River at Dugdemona, and Red River at Alexandria.

Thence taking the route of the road already constructed, it would pass to Cheneyville and Opelousas. Thence the line would be identical with the New Orleans and Opelousas Railroad, by way of Berwicks Bay and Thibodeaux, to Gretna and Algiers, opposite New Orleans.

Distances by this route would be approximately as follows:

From St. Louis to the Iron Mountain	80	miles.	Total.
Thence to the Arkansas line	80	"	160
" Rock Roe or White river	140	"	300
" Arkansas river	45	"	345
" Louisiana State line	80	"	425
" Monroe on Onachita river	30	"	455
" Alexandria on Red river	75	"	530
" Opelousas	70	"	600
" New Orleans	175	"	775
Total	775*		

The crossings would all be upon drawbridges, except at Berwicks Bay, and perhaps at the Arkansas river.—White river, the Bartholomew, the Ouachita and Red river, all offer good facilities for bridges. The Rapids of Red river immediately above Alexandria, afford a good foundation for any desired structure.

It is worthy of remark that this line would cross two streams of the first class at points already indicated for great Railway crossings, and the same structure would answer for both. And each of these transverse routes offers facilities for those who choose to diverge from the line, and by transverse route, pass eastwardly to the New Orleans and Nashville line, and by that route, reach the city in about the same distance, as by the proposed route. The proposed line, then, resolves itself into the building connecting transverse links to the other great lines, about to be constructed; the first connecting the Cincinnati, St. Louis and Pacific Railway with the Charleston, Memphis, Little Rock, and Red river Railway, by a link from St. Louis to Rock Roe, 300 miles long. The second connecting the latter road with the Savannah, Montgomery, Vicksburg, Shreveport and Texas Road, by a link from Rock Roe on White river to Monroe on the Onachita, 155 miles long. The third connecting the latter named road with the New Orleans, Opelousas and Elpaso Road, by a link from Monroe to Opelousas, 145 miles.

* Of this distance, 245 miles may be considered as in satisfactory progress. The company is now being organized for building the New Orleans and Opelousas road, and the Alexandria and Cheneyville road will doubtless be extended to Opelousas by the time of the completion of the former.

The topography of this route presents not a single obstacle in the way of grades from New Orleans, for a distance of 630 miles, say to the middle of Wayne county in Missouri. A few sandy hills, on the Castor, between Alexandria and Monroe, easily skirted without serious deflections, and easily excavated where necessary, and a few similar ones on the divide between the Bartholomew and the Arkansas, are the only departures from a nearly level plane, until we reach the broken country, about the sources of the St. Francis and the Big Black, in the State of Missouri. From this region to St. Louis, the writer has no very definite knowledge of the surface of the country. But as the diluvial formation yields in the South of Missouri, along this line, to the carboniferous and silurian beds, I take it for granted, from analogy, that the country is broken. The regions yielding copper, lead and iron, are not likely to possess very gentle phases. But the portion of the line of which the writer claims a good general knowledge, (and of more than half, a detailed personal acquaintance) presents no obstacle in its topography to the construction of a railroad at the minimum cost.

The greatest obstacles that present themselves are the crossings of the streams: and these, it is freely confessed, are very formidable. There would be required no less than 5 drawbridges, possibly six; and one if not two crossings with Railroad ferry-barges.

Yet with all these, supposing them to cost a million of dollars, I will hazard the opinion that it is, by twenty per cent, the cheapest route that can be named, for a Railroad connecting the two cities.

By this route, there would be about thirty-five counties traversed, of which not more than ten have good perennial navigation or easy access to market; and not more than fifteen have their resources developed, and their lands, however fertile, brought into cultivation, for want of a ready market.

These lands would be readily granted, whether belonging to the States or the United States, for aid in the construction of the road. It is not over-estimating the resources of such an enterprise, to suppose that the counties along the route and near it, would contribute one-fourth of the whole cost in labor, materials, and self-imposed taxes. The lands, say alternate sections for 10 miles wide, or scrip, in lieu, when the lands have been sold, would yield near another fourth. If, then, the States would, as is probable, lend *credit* to the company, to purchase iron on time, taking a lien upon the road for security against loss, it would leave but about one fourth (or less) of the stock to be raised by private subscription. The two cities and the many intermediate towns on the line, would not fail to raise this and much more, if necessary, to complete so stupendous an enterprise.

It may look like a visionary scheme for this age;—but men are

learning to be cautious about the use of the word "*visionary.*" To some persons all suggestion for *progress* looks visionary. The great Erie Railroad passes through a country of not one-third of the fertility and productive capacity, and connects points of vastly less demand, considering the connections already existing between the lakes or New York city. That work cost twenty millions of dollars; this will not cost ten millions. and will traverse nearly twice the length of country, and of vastly superior fertility.

Let St. Louis make a movement for a mere recognizance of the route, and doubtless New Orleans will respond in half the expense of such an examination, as will place the matter in a favorable light before an enterprising and enlightened public. If these suggestions seem valuable, they are at your service. If you could add any information as to the topograghy of that portion of Missouri, lying along the line, it would doubtless be useful light on the subject. The line contemplated, in suggesting Helena as the terminus on the Mississippi river, would be the same as here described to a point not far from the Memphis road, in Arkansas.

Very respectfully submitted by

CALEB G. FORSHEY, Civil Engineer.

Oleanda, Carrolton, La.

ARTICLE III.

Causes of Steam Boiler Explosions.

A treatise upon the causes of steam-boiler explosions, and the proper remedies to prevent them—with drawings for their elucidation. Presented to the Senate of the United States, February 6, 1852, *by A. Guthrie, engineer, of Chicago, Illinois.*

It is remarkable that in an age so fruitful in discovery and improvement, no plan has yet been devised and reduced to practice, which has materially lessened the dangers incident to travelling on steamboats upon the western waters. The learned chemist and ingenious mechanic have labored for many years to discover the causes and guard the traveller against the terrible effects of explosions, and still the loss of life and property from that cause is scarcely less frequent in proportion to the number of boats, than it was twenty years ago.

We have long entertained the opinion that explosions are occasioned by reason of defective material, unfaithful workmanship in construction and unskilful and reckless engineering rather than

from a lack of knowledge respecting the properties of steam. And this opinion has been confirmed by the perusal of Mr. Guthrie's memorial to Congress.

Mr. Guthrie is a practical engineer who has devoted much time in searching out the causes of explosions, and we feel strong confidence, that by the use of his invention and the regulations which he suggests to Congress, the principal danger, incident to steamboat travelling, will be removed. And we sincerely hope that the Government at Washington will afford him the means necessary to test the value of his invention, and a liberal reward for his labors. Should his plans succeed in guarding the traveller and owners of property against disaster by explosion, he will be entitled to the gratitude of the country and regarded as a benefactor of the age.

The memorial occupies too large a space to authorize us to publish it entire. The following extract will show the nature and results of the investigations made by the author.

"For the purpose of learning more fully the real causes of the frequent explosions of steam-boilers upon the western rivers, and to be the better able to apply the proper correction, I set out with a determination, personally, to inspect every steamboat navigating the Mississippi or any of its tributaries. After eight months of constant application, I became satisfied that it would be next to impossible for any one individual to procure the measurements that would be required of the machinery of all these boats; but having succeeded in the examination of nearly three hundred of them, which being somewhat less than one-half of all that are supposed to be running upon these waters, I cut short the examination. I presume, however, that those which I have examined will give me a pretty good idea of all those remaining; I presume, too, that my information might not have been very materially extended by a consultation with the engineers belonging to them. Having already consulted with a large proportion of those in care of the boats from which I had taken the measurements, I the more willingly yielded to the necessity of closing the examination. I have selected two hundred, from the three hundred of these boats, the measurements of which would be the most likely to give me a correct understanding of the proportions, forms and arrangements of all that may be remaining."

"I am fully persuaded, from all the information I could obtain from these sources, together with a somewhat extended experience of my own, that in a very great majority of all the explosions of boilers upon the western waters, the causes were the direct result of *negligence*, *carelessnesss*, or *reckless imprudence on the part of the engineer*. Against these causes to seek remedies, and make proper application of them, requires a stronger arm, a higher power, than individual effort or individual example; therefore I suggest a direct application to Congress for the enactment of such

laws as may, in their wisdom, seem necessary to guard against and insure safety from these explosions."

The memorial concludes with the following suggestions :

"*Recapitulation of the principal causes tending to produce explosions of steam boilers.*—1st. Using iron of an improper thickness, or that of an inferior quality, in the construction of boilers; also, the too frequent use of cast-iron in steam and water pipes, and parts of boilers.

2d. Using boilers defective in form or workmanship, ineffectually stay-bolted or fastened; and also, using boilers weakened by age or use.

3d. Employment of incompetent, reckless, or intemperate engineers.

4th. Using in the construction of steamboats, boilers, engines, paddle-wheels, and machinery, without proper regard to the relative proportions which should exist between the different parts of the whole.

5th. Using inefficient or unsuitable pumping apparatus, and not providing for free and open passages for the water to the boiler, and afterwards for the exit of the steam to the engines.

6th. In not providing a suitable or a sufficient number of safety-valves for the free and full discharge of steam when suddenly accumulating.

7. Want of a proper and suitable system or mode of inspection of steam-boilers, engines, and machinery ; want of suitable and uniform instruments for testing, by hydrostatic pressure, the actual powers of resistance of every boiler brought into use; and also an entire want of laws requiring an inspection of boiler-iron, or material for the construction of boilers.

8th. Want of competent and faithful inspectors, clothed with sufficient authority to regulate the conduct of engineers, and the management and general arrangement of engines and machinery, with power to establish a limit to excessive pressure, within the capabilities of the boilers to withstand it.

9th. Want of a board of supervising engineers, whose duty it is to exercise a general surveillance over all boats or vessels navigated in whole or in part by steam, within the jurisdiction of the United States; and also to exercise a like surveillance over boards of inspection, conduct of engineers, and others in charge of steam engines.

Enumeration of the causes tending to produce explosions, through the conduct of those in charge.—1st. Allowing water to get low in the boilers, through negligence, carelessness, or design.

2d. Overloading the safety-valve, and permitting a dangerous accumulation of steam, for the purpose of racing or wanton display.

3d. Through negligence in not blowing off steam when lying at a landing, or when the engines are not in motion.

Remedies proposed.—1st. Require, that in the manufacture of all steam-boilers hereafter to be made, the best material shall be used, and that of a proper thickness; abandon as far as possible the use of *cast* iron in any part of boilers, steam or water-pipes, where they are likely to be subjected to great pressure.

2d. Never allow the use of a defective boiler in any case, whether it be defective in form, workmanship, age, or use.

3d. Employ competent, prudent and careful engineers, granting certificates to those who are worthy, and prohibiting the employment of the incompetent and intemperate from running engines where life or property may be endangered.

4th. Instruct the board of supervising engineers, as soon as may be practicable, to recommend or establish such relative proportions between all the parts of boilers, engine, paddle-wheels, pumps and machinery, as will insure in the best manner safety of life and property; also, to establish such rules and regulations for the conduct of engineers and management of engines as will give, as near as may be, a uniformity throughout the country. Instruct this board to meet as often as may be deemed necessary, for the purpose of joint consultation, to recommend improvements, to make rules to be observed by the different boards of inspection, to equalize as far as possible the operation of any laws which may be hereafter enacted, and to see that all are faithfully and rigidly carried out.

5th. Provide the most ample and certain means for supplying the boilers at all times with water, guarding against a possibility of a want of a full and ample supply.

6th. Provide suitable and proper safety-valves for each and every steam-boiler hereafter to be used, and such as will at all times afford a certain and free discharge of steam when suddenly accumulating.

7th. Establish a system of inspection that shall be uniform throughout the country, subjecting to hydrostatic pressure every boiler to be used for purposes of steam power, to three times the pressure to which the engineer shall ever be allowed to use it.

8th. Appoint competent, faithful and honest inspectors in such places as the steam navigation of the country shall require; clothe them with proper authority for the faithful discharge of the important duties of inspection, giving them a proper control over the conduct of engineers and the management of engines and machinery.

9th. Pass such laws as will be most likely to insure the faithful performance of the duties of engineers, inducing them to keep a regular supply of water at all times in the boiler, and never to subject them to undue pressure.

I feel every confidence in expressing an opinion that if these few recommendations shall be faithfully carried out, explosions of steam-boilers will no longer occur. From many years of practical experience, and a long and careful investigation of this subject, I have become well satisfied, in my own mind, that there never has been a single explosion in this country but what could be traced directly to some one of the causes I have enumerated, but which might have been prevented by *prudence* and *care*.

I feel such confidence in the above statement, that I would be willing to choose blind-folded any steamboat in this country, and run her to any port within it, and return, without the least danger of explosion. I would do it simply by the exercise of prudence and care.

It is true, that there might be defects in some parts of her boilers or machinery that I could not discover, and which might prove fatal to my success. It is for the purpose of discovering these defects, and applying the proper remedy, correcting the evils that to-day exist, and providing against the present dangers that surround us, that we call upon the Government for its aid.

It seems to me that money can have no weight against a successful effort to cure this great evil. Individually, I have probably devoted more time and means pursuing the investigation of this subject than any one individual in this country, and even up to this day without a prospect of remuneration; yet, if the evil can be corrected by any effort of mine, I shall feel that I have not lived altogether in vain.

It may perhaps appear to some that I bear too heavily upon the main body of engineers; but allow me to remark that I am an engineer myself, engaged in this avocation as a means of subsistence, and that I am not insensible of the many difficulties against which engineers have to contend, nor am I insensible, on the other hand, of the great sacrifice of life and property which has been the penalty of explosion. I consider that the true interest of all will best be promoted by concealing nothing, but rather to make an open and frank avowal of all the causes co-operating to bring about these sad events, and then bespeak that aid which I am sure none will withhold.

It appears to me that I have now gone as far in my recommendations as would be necessary to secure perfect immunity from explosions, and as far as legislative aid can go to promote the same object; and here I should have left it, were it not that pecuniary interest exerts such a strong influence over the conduct of men, as induces them oftentimes to evade the most salutary and wise provisions of law, at any prospect of gain. In the measures I have proposed, I have endeavored, as far as possible, to restrict myself to such recommendations as should require no great sacrifice of property, or make any great innovation upon the present

established system of navigation; or which would insist upon any great estrangement of individual prejudice or preconceived opinion; keeping steadily in view, however, the importance and necessity of checking *effectually* this alarming evil. But, after all, I do not suppose that any law can be so framed or administered, that evasions and abuses will not creep in; and my labor would only be partially accomplished, should I leave the passengers without every safeguard that can surround them from these impending dangers.

Therefore, as an additional security, I set about devising some plans to accomplish this necessary object; and for this purpose I have invented an apparatus designed to be placed in the cabin of every steamboat, always open to the inspection of any passenger, to be protected by suitable laws against all interference by the engineer or officers of the boat, and locked up by the local inspectors, the keys being detained by them (as in the public mails.)

This apparatus is designed expressly for the benefit of the passengers, and will, by means of a dial-plate, always register the exact stage of the water in any of the boilers, and give instant alarm, by ringing a bell, of any negligence or want of care on the part of the engineer.

This dial-plate is so constructed that when there is a safe stage of water in the boilers, the words "GOOD WATER" will appear on the surface of it; but at the instant the water begins to go down, the words "good water" are removed, and the words "WATER GETTING LOW" will take their place, and the bell be rung to call attention to it. Now, if the engineer allows this call to be neglected, the water gets still lower, the words "water getting low" will be removed, and the words "WATER DANGEROUS" will take their place, and another bell will be rung to direct attention to it, and both bells will ring until water is supplied. The principle upon which this operates is believed to be entirely new and original.

Close by this indicator is placed another, which gives at all times an exact register of the pressure on the boiler, operating nearly in the same manner as the water-indicator, by which the least variation of pressure will be detected, even if it should exceed by a single pound the pressure which was permitted by the inspector; the words "STEAM SAFE" will be removed, and the words "DANGEROUS STEAM" will appear in its place, and a bell will be rung to call attention to it.

The plan of operation intended by me, may be something like the following:

We will suppose a steamboat at St. Louis, ready to depart for New Orleans. The inspector is notified of the fact, repairs on board, and makes a proper inspection of the boilers, engines and machinery, and finds they bear the relative proportions, with the proper pumping apparatus, free and unobstructed passages, and all in good order. But he finds the boilers are old and somewhat

worn; or perhaps, in the application of the hydrostatic pressure, he finds indications that it will not be safe to run these boilers under a higher pressure than, say fifty-five pounds to the square inch. He then says to the engineer, you may run with this pressure and no more. You may also run, when the water is full, three inches above the flues and no lower. He then repairs to the cabin, and there adjusts the indicators to the prescribed limits. (which can be done in a moment,) locks up the indicators, and retains the keys. Between the two indicators he places his permit, and the boat is allowed to depart. We will now suppose the boat has proceeded on her voyage as far as Memphis, and during this time the engineer has had "dangerous steam" or dangerous water, and none of the passengers are disposed to prosecute him for the penalty in the bond; it will be the duty of the local inspector there to repair immediately on board and unlock the indicators, where he will find a secret register giving the exact number of times that dangerous steam or water has occurred, and exactly to what extent, since the departure from St. Louis; and if he should consider it unsafe to allow the engineer to continue in charge, he substitutes another in his stead.

In order to facilitate the trial of boilers by hydrostatic pressure, I have invented an apparatus which will, with unerring certainty, show the exact pressure to which any boiler may be subjected. This can be applied to any boiler in a moment—is not likely to get out of order, and I consider it as an important instrument in carrying out the details of my plans.

I have also invented a safety-valve which I denominate an indicating safety-valve, which will indicate the exact pressure of steam in the boiler at all times, and which will, with the most reliable certainty, relieve the boiler by blowing off the steam at any given pressure established by the inspector; it is not liable to get out of order, and having no seat to rest upon, it will not be liable to attachment or sticking to it: it will seldom or never become stationary, because it is constantly active; giving the register of pressure within; and is effectually protected from all interference of the engineer or officers of the boat, and will relieve the boiler from undue pressure if it should exceed, by a single pound, the limit prescribed, despite any effort of the engineer; it cannot be done without instant detection.

As it now is, there is not a single passenger in a thousand but who goes upon a boat, as it were, perfectly blindfolded. To him, the whole (as the facilities for information now exist) is in perfect darkness.

I conceive it would be one of the most gratifying conditions of things that could be added to the present mode of steamboat navigation, for the passengers to have the positive means of knowing at all times, by the earliest intelligence, the approach of danger. Indeed, could such an event be brought about, it would be hardly

possible to get up an explosion. That I have in the first place shown the causes tending to produce explosions, in the second place made the only proper suggestion, to prevent them; and, in the third place, that I have devised the most perfect plans to keep the passengers informed, if the second should be neglected, I have no doubt; and if the government should think it advisable to give my instruments a trial, I should not shrink from the most scrutinizing investigation. A. GUTHRIE.

ARTICLE IV.

Isthmus of Tehuantepec.*

The Isthmus of Tehuantepec is that portion of the Mexican territory which lies between the Gulf of Mexico and the Pacific Ocean, where the two seas approach the nearest to each other; and comprises the eastern portion of the States of Vera Cruz and Oaxaca.

From the mouth of the Coatzacoalcos, which discharges itself into the Gulf in 18° 8′ 20″ north latitude, and 94° 32′ 50″ longitude west (from Greenwich), to the harbor of Ventosa on the Pacific, situated in 16° 11′ 45″ north latitude and 95° 15′ 40″ west longitude, the distance in a direct line is 143½ miles. The coast-lines on either side have a general direction nearly east and west.

In considering the Isthmus with reference to its general topographical features, it may properly be said to comprise three main divisions, more or less distinct in their general characteristics; the first, embracing that portion extending from the Gulf to the base of the Cordillera, and which may be called the *Atlantic plains*; the second, comprising the more elevated or *mountainous districts* in the central parts, and the third, including the level country bordering the ocean on the south, and known as the *Pacific plains*.

The first division comprises a belt of country of some forty or fifty miles in breadth, lying contiguous to the Gulf coast, and made up of extensive alluvial basins of exceeding richness and fertility, through which the drainage of the northern slope of the Cordillera discharges itself into the Gulf.

The principal of these hydrographic basins is that of the Coatzacoalcos, which occupies the central portion of this division, and has a general direction of N. N. E. by S. S. W. It is separated from the basin of the Tonola and Tancochapa rivers on the east, and the San Juan on the west, by a moderately elevated plateau

* The following topographical view of the Tehuantepec route is extracted from the Report of the Survey made by the Tehuantepec Railroad Company, under the general superintendence of Major J. G. Barnard of the United States Engineers. We copy from the "American Railroad Journal."—*Editors.*

or table land, furrowed by numerous small streams, and generally covered with dense forests. These table lands, with few exceptions, are not elevated more than two or three hundred feet above the sea level.

Conspicuous to the west of the Coatzacoalcos are the peaks of San Martin and Pelon, mountains of considerable magnitude, and constituting the most striking topographical features of this division of the Isthmus. They occupy an angle in the coast, which at the Barilla turns to the north, making nearly a right angle with the coast line to the east, and gradually curving to the west for a distance of 20 or 30 miles, when it again assumes an east and west direction. The mountains referred to terminate a long range of hills extending to the west, and gradually decreasing in height till they subside to the level of the plain country bordering the San Juan river on the east: the whole being known as the Tuxtla range. With few exceptions, the entire country embraced in the northern division (as seen from the highlands immediately south of the Jaltepec river) presents the appearance of a broad plain, entirely covered with dense forests.

The second or middle division may be said to extend from the Jaltepec river on the north to within 20 or 25 miles of the Pacific coast, comprising a strip of country through the central portions of the Isthmus, of some 40 miles in breadth on the west, and gradually widening out towards the east to 60 or 70 miles. This division presents a great diversity of features. The immense chain of the Cordillera, which, under different denominations, extends almost without interruption, the entire length of the two Americas, traverses the country from east to west; but instead of those lofty volcanic peaks, which constitute so striking a feature of extensive portions of this gigantic chain of mountains, there is a sudden depression of the range in its passage across this Isthmus, the continuity of the chain being nearly broken at a point directly in the line of shortest communication between the two oceans. The Cordillera here approaches very near the Pacific coast, and its southern slope terminating suddenly, extends in nearly a right line for a considerable distance in an east and west direction. But on the north side, the base of the mountain range, commencing at the point of greatest depression, forms an extended curve to the northeast on one side, and to the northwest on the other, having the concave side turned towards the north. The section of country lying to the south of the Jaltepec and Chalchijapa rivers, and circumscribed on the east, south and west by the above mountain range, is made up of elevated table lands, more or less broken and divided by low irregular spurs from the main Cordillera. To the east and west we find a confused mass of mountains, which, though attaining to but a moderate elevation, cover a large extent of country, particularly on the east, where they fill nearly one-half the breadth of the Isthmus. The table lands above mentioned

comprise an area of about 1400 square miles, and are watered by the Jamuapa, Sarabia, Malatengo, Almoloya and Chichihua rivers, all tributaries to the Coatzacoalcos, and streams of small importance, by reason both of their limited length and the comparatively small volume of their waters. The first four take their rise in the mountains to the west, and the last drains a portion of the mountainous districts to the east. These streams present through nearly half their length the character of mere torrents, and their currents are generally rapid throughout their entire course. In their passage through the table lands, they are generally bordered by a greater or lesser breadth of rich alluvial bottoms.

The elevated spurs and ridges referred to, and which traverse the country generally in an east and west direction, offer the principal obstacles to the construction of a railroad across this portion of the Isthmus. The Jaltepec and Jumuapa rivers are separated by a chain of highland, constituting a spur from the Cordillera on the west, and extending easterly to the Coatzacoalcos; branching from this main ridge, are numerous lateral spurs, which decreasing in width and height, gradually subside by the level of the river bottoms. We also find the country bordering the Sarabia river considerably elevated and broken, from its confluence with the Coatzacoalcos to a point about two miles westward of Boca del Monte; and three miles southwest of this latter place is a high range of hills, known as the mountain of Sarabia.

Further to the south are the hills of Xochiapa, which originally seem to have formed a connected chain, joining the mountain range to the east and west, but have been cut through or divided by the Malatengo, Almoloya and Chichihua rivers; thus opening *natural* passages through a range of hills, which otherwise would seem to have offered an almost insuperable obstacle to the construction of a railroad. Between this range and the Summit Pass, the country is made up of elevated rolling plains, which are divided by low ranges of hills into three divisions, known respectively as the plains of Xochiapa, Chivela and Tarifa, which generally present a very smooth surface, but more or less undulating, and nearly destitute of heavy timber, except on the margins of the principal streams. They gradually become more elevated as we approach the Summit Pass, and also present a more uniform level surface. They are bounded on the south by the cerros Prieto, Masahuita and Espinosa, all of which terminate in rugged limestone peaks, at an elevation of from 1500 to 2000 feet above the Pacific; and form the only connecting links between the high mountain chain extending westwardly through the State of Oaxaca, and the Cordillera of Guatimala on the east.

By a narrow opening or gap in these mountains, we descend suddenly from the elevated table lands to the Pacific plains, which form the third or southern division. These plains average about

twenty miles in breadth, from the base of the mountains to the Pacific coast, and descend on the meridians to the lagoons, at an inclination varying from ten to fifteen feet in the mile; thus forming, as it were, an immense inclined plane, with its side next the mountains about two hundred and fifty feet above the Pacific. Under these circumstances they present a remarkably smooth, even surface, with an uniform, gentle slope towards the sea. In some instances there are occasional isolated hills, which rising abruptly, form a prominent feature in the topography of this part of the country. The plains are traversed by eight rivers, which discharge the drainage of the southern slope into the sea. Seven of these rivers empty into the lagoons, which are connected with the sea by a narrow outlet, called the Boca Barra; the eighth, or Tehuantepec river, comes from a northwesterly direction, and passing through the city of the same name, discharges itself directly into the sea at the Bay of Ventosa.

All of these streams, as they issue from the mountains, are remarkably pure and limpid, even in times of flood, thereby indicating the rocky nature of the districts which they drain. In their descent towards the plains they offer almost unlimited sources of water-power, which at many points may be made available for sawing lumber or for other purposes.

The lagoons, which receive most of the drainage of the southern slope, extend a distance of nearly forty miles along the coast, and comprise an area of more than 200 square miles; they are divided by a narrow peninsula of land into two principal divisions, known as the upper and lower lagoons.—Though of considerable extent, they are generally shallow, and no doubt annually becoming more so from the sediment brought down by the numerous rivers which discharge into them.

The bay of Ventosa is formed by an indentation in the coast, and the projection of the Cerro Moro on the west. The Tehuantepec river discharges itself near this point. The bay is partially sheltered from the north winds by low ranges of hills from three to four miles distant. A short distance to the westward are two similar indentations of the coast, known respectively as Salina Cruz and Salina del Marques.

Of the streams watering the northern slope of the Isthmus, the most important by far is the Coatzacoalcos, by reason both of the comparatively large extent of country, for the drainage of which it is the outlet, and also as furnishing the natural channel through which the projected communication between the two oceans may, in part, be effected. The river takes its rise in the unexplored part of the Sierra to the east of Santa Maria Chimalapa. About thirteen miles above this village, the Chimalapilla falls into the Coatzacoalcos on its right bank. This was the highest point explored by the commission; but the Indians ascend it on rafts thirty or forty miles further beyond.

From Chimalapilla, the Coatzacoalcos receives a large number of tributaries, among the most important of which are the Coachapa and Aspinapa on the east, and the Jaltepec and Tierra Nueva on the west. The Aspinapa is a large and important river, and is navigable for some distance for large ships.

From the mouth of the Jaltepec to the mouth of the Coatzacoalcos, the latter has a gentle and pretty uninterrupted current. For a very considerable distance it is navigable for large vessels. We copy the following account of the river, from Mina-titlan to its mouth, a distance of about 20 miles.

"The banks of the river below Mina-titlan are very low and frequently flooded. The mouth of the Coatzacoalcos, the geographical position of which has been given, is 115 miles west from the river Grijalva or Tobasco, and 110 miles from Vera Cruz. Its width is about 1500 feet, and its depth varies in different places. A transversal section of the river, over the bar, shows it to be slightly swelled in the middle and hollowed out towards the two banks of the river; the hollow on the right forming the eastern, and the other the western pass. The greatest depth of the latter is close to the bank on which the fort is built. This pass is a straight channel, of easy entrance, and always the same, by reason of the nature of the material composing the bar. It has a width of 350 feet and a depth of 13 feet, which, however, is diminished to 12½ in the month of May. The tides are not strong on the Mexican coast; but in case of heavy northerly winds, the waters of the river are backed up, giving a sensible increase of depth on the bar. The eastern channel is about 100 feet in width, and its depth varies from 11 to 12 feet.

As soon as the bar is crossed, and the ascent of the river commences, it widens and deepens, and at 7 miles from the Gulf the lead shows a depth of 40 feet, which is preserved for some distance. The lead depth in the channel below Mina-titlan is 12 feet, and this may be carried nearly to the island of Tacamichapa. The superior advantages offered by this stream as a safe and convenient harbor for ships, early attracted the attention of the Spanish conquerors. Cortes, in his official dispatches to the Emperor Charles V., speaks of the importance of this river, as furnishing the best harbor to be found on the Gulf coast of Mexico. In giving the results of a survey of the river, made by his order, he says: "They found two fathoms and a half of water at its entrance, in the shallowest part, and ascending twelve leagues, the least they found was five or six fathoms."

These soundings were made in the year 1520, and give about the same depth over the bar at the mouth of the river which we now find. This is an important fact, as proving that the material of which the bar is formed does not change its position, and giving promise that any work for deepening the channel at this point will afford permanent results."

ARTICLE V.

Proposed Reconnoissance of the seas around China and Japan.

The fruits of no other branch of industry are so entirely a gain to the national wealth as those derived from fisheries; and this consideration alone should be sufficient to induce our Government to promote the interests and safety of the hardy seamen engaged in this perilous pursuit. We, therefore, regard the proposed reconnoissance of the whaling grounds in the Arctic sea as creditable to our Government, and trust that the measure will be speedily carried into effect.

The following communication from the Secretary of the Navy to the Senate of the United States contains an interesting account of the whaling operations in the regions about Behring's Straits, for the last three years, and is calculated to excite a high degree of admiration of the daring enterprise of American fishermen.

NAVY DEPARTMENT, April 5, 1852.

Sir: I have the honor to acknowledge the receipt of the Senate's resolution, adopted on the 22nd ult., calling upon "the Secretary of the Navy" to "communicate to the Senate his opinion of the expediency of a reconnoissance of the routes of navigation in the northern seas, and in the China and Japan seas, and whether any vessels belonging to the service can be used for that purpose; and also, what would be the expense of such a reconnoissance."

So far as regards the expediency of the reconnoissance referred to in the resolution, I find that the files of this Department contain a carefully prepared discussion of the subject by the Superintendent of the National Observatory of the date of December 31, 1851—confined, however, to the value and importance of the whale fishery in the Ancadir Ochotsk, and Arctic seas, as the whaling grounds in the regions about Behring's Straits are called, from which I beg leave to furnish the following extracts:

"In the summer of 1848, Captain Roys, of the whale ship Superior, penetrated the Arctic ocean, through Behring's straits, and encountered in his adventurous pursuit all the dangers of an unknown and Polar sea. He was successful in his enterprise, filling his ship with oil in a few weeks. Influenced by the report which he brought back as to the abundance of whales, owners in the United States fitted out a large fleet for those grounds, and, in 1849, Captain Roys was followed by one hundred and fifty-four sails of whale ships, each vessel said to be worth on the average, with her outfit, $30,000, and manned by 30 able-bodied seamen each. This fleet took that season 206,850 barrels whale oil, and 2,481,600 pounds of bone.

"In the summer of 1850 there went up a whaling fleet of one hundred and forty-four American vessels, manned as above, and of a like average value. This fleet, in the course of a few weeks, left for their pursuits, in those inhospitable regions, took 243,680 barrels whale oil, and 3,654,000 pounds of bone.

"In the current year (1851) there went up a fleet of about one hundred and forty-five American vessels; but their returns have not been received; partial accounts of wreck and disaster only have reached us. They are startling.

"The lives and property at stake there for the two years for which we have complete returns, may be thus stated:

1849.	Number of American seamen, 4,650.		
	Value of ships and outfit,.....	$4,650,000	
	Value of oil taken,.....	2,606,510	
	Value of bone,.....	814,112	
			$8,070,622
1850.	Number of American seamen, 4,320.		
	Value of ships and outfits.....	$4,320,000	
	Value of oil taken,.....	3,761,201	
	Value of bone,.....	1,200,630	
			$9,341,831
	Total ships in two years,.....	299	
	Total seamen,.....	8,970	
	Value of ships and cargoes,.....		$17,412,453

"The losses during the year 1851 have been unprecedented, so far as heard from. No less than seven sails of this fine fleet of 1851, the Honqua, the New Bedford, the Arabella, the America, the Armata, the Mary Mitchell, and the Henry Thompson, have been wrecked there, and left behind as monuments of the dangers which meet these hardy mariners in their adventurous calling. There are reports of other losses and wrecks: these are certain; and though several of them were lost, not on shoals, but otherwise, yet there are enough to tell of imperfect hydrography, and to show the national importance of looking to it; for it may be so, that in case of loss by ice, the knowledge of a sheltered anchorage near, and which a survey would give, would have pervented the exposure to the ice which induced the loss.

"All our commerce with what is called 'the East' is not so valuable as this was for 1849 and 1850.

"We see by the above statistics that in those two years more American seamen were engaged in that small district of ocean than are employed in our whole navy, at any one time; that in these two years these hardy mariners fished up from the bottom of the sea, and by their own energy created and added to the national wealth, the value of more than eight millions of dollars. And we moreover see that, owing to the dangers of the land and the ice, the hidden

rocks and unknown shoals, one vessel in every twenty that went therein during the summer of 1851 has been left behind a total wreck, and that the lives of their crews, or of not less than one man for every twenty engaged in that business, have been put in jeopardy, mostly for the want of proper charts. No protection that our squadrons can at this moment give to our commerce with any of the States of Christendom can compare with that, which a good chart of that part of the ocean would afford to this nursery of American seamen, and to this branch of national industry.

"I learn that in latitude 64 deg. 15 min. N., long. 178 deg. W., Capt. Middleton, of the barque Tenedoz, of New London, discovered a shoal having only eight feet of water on it, and two acres in extent. That the ship Ajax, of Havre, was lost on a rock S. of the isle of St. Lawrence, ten miles from land. That the entire fleet of whalemen in the Arctic ocean complain much that charts are wrong. That the coast is badly explored, but little known, &c. That several of our vessels have been near being wrecked by unexpectedly making land or rocks under the bows at night. That they have found in the Arctic Circle low sand-spits, extending five or six miles out. That also in Ochetsk sea there are hidden dangers. That the Honqua, in 1851 was totally wrecked on a sunken rock in that sea.

"I am also informed that the Indians are very friendly; that they wanted to trade; that the whalemen frequently went on shore, etc. That Capt. Taylor brought specimens of ores of metals from the Arctic shore; that he obtained information of the natives of the existence of gold among them, as also iron; that when shown implements of various kinds, they gave him to understand, plenty in the mountains. Such also was the case with gold; they knew the metal, and pointed, as such existing among them."

With these facts before the Department, I have no hesitation in expressing an opinion favorable to the measure suggested in the resolution, nor in recommending such a reconnoissance and survey as will establish accurately the positions of the prominent capes, bays, headlands and harbors.

To fix the positions of the rocks and shoals that endanger the navigation there, and to examine the Fox or Aleutian Islands, would be the work of two or three properly appointed vessels only for a short time. When the season is closed for these latitudes, the same vessels could be most beneficially employed in an examination of the seas of China and Japan, and the regions thereabouts, and an accurate knowledge of which is becoming every day of more and more importance.

In reply to the latter clause of the resolution, viz: "whether any vessels belonging to the service can be used for that purpose, and also what would be the expense of such reconnoisance," I respectfully state that this Department has not at its command the vessels cenessary for the contemplated service, unless by reducing the

numbers of our vessels attached to squadrons on foreign service, and which I by no means recommend.

I am of opinion that the necessary vessels can be built at our navy yards, or purchased for a sum not exceeding $125,000, and that no additional appropriation, beyond that sum, need be made. The wear and tear of the vessels, pay of the officers and crews, stores, provisions, instruments, &c., can be provided for out of current appropriations. The accompanying report from the Chief of the Bureau of Ordnance and hydrography, and papers prepared by Commander Ringgold and Lieutenants Maury and Page, are respectfully submitted as throwing additional light upon the subject.

I have the honor to be, very respectfully, your obedient servant,

WILL. A. GRAHAM.

Hon. W. R. King, President of the Senate.

Article VI.

Steamers between Virginia and Antwerp.

We commend the following article extracted from the "Cotton Plants" to the careful consideration of our readers in the valley of the Mississippi. The estimates of the author respecting the losses incurred by reason of the present system of indirect trade between Virginia and foreign countries may be too high, but whether this be the case or not, we are fully persuaded that a state of general and progressive prosperity can never be established and permanently maintained in that great Commonwealth, so long as her present commercial system continues. She may exhaust her means in carrying out a thorough system of internal improvements, open her mines of iron, coal and lead, and even restore her worn-out lands to a state of fertility, but New York, and other eastern cities, will enjoy the profits as long as she permits them to manage her commerce.

We rejoice that the people of Virginia have become awakened to the importance of building up a commerce of their own. With ocean steamers in connection with a system of railroads penetrating the valley of the Mississippi, the ancient borough of Norfolk may yet become one of the great commercial emporiums of the Atlantic coast, and the State regain that eminent position, in respect to wealth and social power, which she enjoyed in her most palmy days.

FACTS AND CONSIDERATIONS WHICH RECOMMEND THE ESTABLISHMENT OF A LINE OF STEAMERS BETWEEN VIRGINIA AND ANTWERP..

To the Legislature of Virginia:—

Agricultural Productions of Virginia as per Census of 1851.

Bushels of Wheat,	14,516,950	At $1 00, value.....	14,516,950 00
do. Indian Corn,	35,538,582	" 50 "	17,769,291 00
do. Flax-seed,	53,333	" 1 10 "	58,666 30
Pounds of Tobacco,	66,516,492	" 6 "	3,990,989 52
do. Butter,	11,126,785	" 16⅔ "	1,854,465 17
do. Wool,	2,850,909	" 30 "	855,272 70
do. Maple sugar,	1,223,905	" 6 "	73,434 30
do. Cheese,	434,850	" 8 "	34,788 00
Tons of Hay,	370,117	" 16 00 "	5,922,832 00
do. Hemp, dew-rotted,	3,450	" 60 00 "	207,000 00
do. do. water-rotted,	1,149	" 100 00 "	114,900 00
Bales of Cotton, 400 lbs. each,	2,767	" 30 00 "	83,010 00
Gallons of Wine,	4,280	" 1 00 "	4,280 00
Live stock,	——	— "	33,607,362 00
Home manufactures,	——	— "	2,156,073 00
Cord wood, Oysters, Fish, Peas, Beans, Potatoes, Garden Vegetables, Fruits and Melons, estimated at not less than			5,000,000 00
Amounting in the aggregate to			$86,249,314 00

The average difference in the market value of these productions between Virginia and New York is, at the lowest estimate, 10 per ct. in favor of the latter. To that extent, therefore, Virginia sustains a loss upon that portion of them which is consumed without her own limits, whether by her sister States or exported abroad. This may be safely estimated as follows viz:

Of Wheat, one-half the quantity raised, value.....	$7,258,475 00
Of Indian Corn, one-fourth	4,442,322 75
Of Tobacco, two-thirds.....	2,660,659 68
Of Cord-wood, Oysters, &c. one-half.....	2,500,000 00
These articles alone amount to	$16,861,457 43
Which, at 10 per c., gives a loss of.....	$1,686,145 74
It is estimated that about four-tenths of the difference in value above mentioned arises from freight and incidental charges. Deduct that proportion, and a depreciation of 6 per ct. remains to be accounted for. This is readily, and it is believed correctly done, by the fact that New York, being the point at which our export and import trade are now made to meet, and where the great mass of our commercial payments are made, is thereby enabled, through her exchanges, to exert a controlling influence over our financial interests, which keeps down prices here, and raises them correspondingly there. Six per ct. estimated upon the value of our remaining productions not embraced above, viz: $69,861,457 43, shows a further loss of..	4,163,371 39
Which added to the foregoing, exhibits an annual loss sustained by our citizens from this cause alone, of.....	$5,849,517 13

These estimates founded upon the late census returns and such other reliable information as could be obtained, are believed to be sufficiently accurate for all practical purposes, and to fall below rather than exceed the actual loss which a more rigid statistical analysis would exhibit.

For want of any certain data by which to ascertain it, we can only approximate the amount of loss sustained upon the domestic consumption of articles brought into this State from elsewhere. It is believed that of such articles we consume an amount in value fully equal to that arising from the sale of our own productions, viz: $16,861,457 43. Upon that amount the controlling influence of New York before mentioned equally operates, and consequently produces the same depreciating effect.

We may therefore properly estimate the loss arising from this cause at	$1,686,145 74
To which may be added for profits to the Northern factors, and incidental charges, at least 12 per c. more	2,023,374 89
Making the whole loss upon domestic consumption	3,709,520 63
Add to this amount of loss upon productions, as above	5,849,517 13
And it exhibits an aggregate annual loss of	$9,559,037 76

If the foregoing estimates are correct, they shew clearly why it is that the Virginia merchants cannot, except to a very limited extent, import directly from abroad. The merchant of the North enjoys an advantage over ours of at least 12 per cent. additional profit (6 per cent. on the *export*, and the same upon the *import* trade)—a per centage more than twice as large as that usually charged by the import dealer upon the cost of his goods. This gives to him an absolute control over that entire branch of trade.

The great benefits resulting to the Northern merchants from our present commercial vassalage is fully appreciated by them, and hence their constant and vigilant efforts to retain it. No sooner had Virginia begun to move in this matter by the call of a convention at Old Point for the purpose of considering the best means of promoting our own direct foreign commerce, than did those merchants commence the construction of five first class steamers to ply between their ports and ours. This could only have been done to prevent the achievement of our commercial independence, and secure to themselves the continued enjoyment of their present monopoly.

But this is not all. Within the last two weeks citizens of New York, no doubt stimulated by the apprehension of the passage of the bill for establishing a line of steamers between the waters of Virginia and Antwerp reported to the Senate by the select committee, and its ultimate effect in opening and promoting our direct trade, have applied to Congress for aid in the construction of a line of steamers between that city and some port in Belgium. Not content with the monopoly of nearly all the existing lines of our foreign commerce, that *grasping city* seeks with eager haste to pounce upon and appropriate to her own exclusive benefit, or to break down by opposition, every new line sought out and suggested by the enterprise of others.

For want of the necessary statistics, nothing is said about our loss upon the value of the mineral productions of Virginia, which, it is believed, amounts to several millions more.

Will Virginia continue to remain passive, and rest satisfied with the present ruinous course of her trade, without an effort to change

and improve it? Great as are her resources, can she sustain so heavy a drain as from ten or twelve millions of dollars depreciation in the value of her productions every year?—a sum more than sufficient in three years to pay off her whole debt, and perfect all the great lines of internal improvement necessary to develop her own resources and invite the commerce of other States through her borders.

The bill above mentioned proposes to stop that drain without either charge or risk to the commonwealth or her citizens. Will she not avail herself of the opportunity thus afforded to accomplish an object so imperiously demanded by the best interests of her citizens? Before another so favorable can ever be presented for her acceptance, New York will have stepped in; preoccupied the line and secured to herself forever all its benefits.

At the present time nearly all of the mails of continental Europe pass through England and on to New York. The direction of trade ever follows the line of postal communication, and for that reason mainly is it that the trade between this country and Europe now centres at New York. Let a direct communication by steamers be established between Norfolk and Antwerp, and we shall at once secure the whole of that portion of the continental mails which come through Belgium, embracing a population of more than one hundred millions, and sweeping over a territory containing some of the finest agricultural and manufacturing districts in Europe. And besides, in a short time we shall obtain a good share of the residue, for the following reasons: 1st. The inward voyage from Liverpool to Norfolk is from eighteen to thirty hours shorter than it is to New York. One day will be thus saved. 2d. Another day will be saved in escaping the detention incident to the transit through England. The saving of two days in the transmission of intelligence, at an era when time enters so largely into the computation of all business operations, would of itself be controlling. But when we add to this, 3dly, the further saving of the onerous charges now imposed by England upon the transit postage through that kingdom, it can hardly be doubted that the Virginia and Antwerp line will in a few years after its establishment transport the largest portion of the mails between Europe and this country. When this is done trade will necessarily follow, and the great seaport of Virginia, being the centre of commercial intelligence, must become also the centre of commerce itself. No longer dependent upon New York, Virginia will then be the recipient of the benefits of exchange and other commercial profits, instead of paying them to others as she now does to the amount of nearly twelve millions of dollars per annum.

ARTICLE VII.

Seventh Census of the United States.

Desiring to publish nothing relating to the late census that was not official, we have, except in a few instances, declined publishing newspaper statements, and hence, in respect to this subject, we have not kept pace with our contemporaries.

We take the following extracts from the "Report of the Superintendent of Census," as published in the Congressional Globe-Extra.—*Editors.*

REPORT OF THE SUPERINTENDENT OF CENSUS.

Census Office, Washington,
December 1, 1851.

SIR:—I have the honor to report that full and complete returns of the Seventh Census have been received from all the States of the Union on this side of the Rocky Mountains, and from the Territories of New Mexico and Oregon. A portion of the California returns were destroyed by the conflagration at San Francisco—an accident which rendered it necessary for the census agent to prepare new copies from the originals, which are expected here daily. The other returns have been received.

The returns from Utah are expected by the first mail from that Territory, advices having been received of their completion. Three sets of schedules were transmitted by different conveyances, of which only one set reached the agent, which accounts for the delay. The census for that Territory had been taken on manuscript schedules, and, at the latest dates, the agent was engaged in transferring the same to the printed blanks.

On the 30th September there were employed in this office ninety-one clerks, two messengers, two watchmen, and two laborers. In the month of November it was found necessary, in order to prepare certain information in time for the meeting of Congress, to make a large temporary addition to the clerical force of the office, and the number was increased to one hundred and forty-eight, who have performed extra duty.

The frequent demands made by State officers and private individuals for statistical information, has much increased our labors. All such calls have been promptly responded to, when compliance therewith would not interfere too much with the progress of business.

The schedules used in taking the Seventh Census of the United States were arranged on principles different from any heretofore used for that purpose. The plan adopted for their construction, while adding immensely to the labor of the office, presents, on the face of the schedule, much more information in the same space,

and a better combination of facts relating to persons and things, than has heretofore been attained, while it is perfectly simple, without complication, but little liable to error, furnishing easy means of detecting and correcting most of the errors which occur. These blanks were prepared under the direction of the Census Board, and were furnished in timely season. They proved to be well adapted to the purpose for which they were designed. Among the great number transmitted through the mails, from every portion of the territory, not one schedule was received at the office in a mutilated condition, or in any way injured.

The expenses of the Census Office have been as follows, viz:

For printing and stationery, including the amount reported at the first and second sessions of the last Congress, and by the Census Board	$33,153 71
For amount paid United States marshals	34,001 25
For amount paid to assistant marshals	891,245 18
For amount paid for clerk hire and contingent expenses of the office	105,929 66
The aggregate amount appropriated for taking the Seventh Census was	1,267,500 00
The balance on hand this first day of Decemb., 1851	203,170 00
The balance due to marshals and assistant marshals of the United States	130,201 00
To pay our contingent expenses, including clerk hire, office rent, fuel, stationery, etc., to the 30th day of June, 1853, there will be required an appropriation of one hundred and fifty thousand dollars	150,000 00

The cost of printing the compilation of the Seventh Census forms no portion of this estimate—that must be determined by the plan adopted by Congress for the execution of the work.

* * * * * * *

The seventh enumeration of the inhabitants of the United States exhibits results, which every citizen of the country may contemplate with gratification and pride. Since the census of 1840, there have been added to the territory of the republic, by annexation, conquest, and purchase, 824,969 square miles; and our title to a region covering 341,463 square miles, which before properly belonged to us, but was claimed and partially occupied by a foreign Power, has been established by negotiation, and it has been brought within our acknowledged boundaries. By such means the area of the United States has been extended, during the past ten years, from 2,055,163 to 3,221,595 square miles, without including the great lakes which lie upon our northern border, or the bays which indent our Atlantic and Pacific shores; all which has come within the scope of the Seventh Census.

In the endeavor to ascertain the progress of our population since 1840, it will be proper to deduct from the aggregate number of inhabitants shown by the present census, the population of Texas

in 1840, and the number embraced within the limits of California and the new Territories, at the time of their acquisition. From the best information which has come to hand, it is believed that Texas contained, in 1840, 75,000 inhabitants; and that when California, New Mexico, and Oregon, came into our possession, in 1846, they had a population of 97,000. It thus appears that we have received, by accessions of territory, since 1840, an accession of 172,000 to the number of our people.

The increase which has taken place in those extended regions, since they came under the authority of our Government, should obviously be reckoned as a part of the development and progress of our population; nor is it necessary to complicate the comparison by taking into account the probable natural increase of this acquired population, because we have not the means of determining the rate of its advancement, nor the law which governed its progress, while yet beyond the influence of our political system. The year 1840, rather than the date of the annexation of Texas, has been taken for estimating her population, in connection with that of the Union, because it may safely be assumed that, whatever the increase during the five intervening years may have been, it was mainly, if not altogether, derived from the United States.

Owing to delays and difficulties mentioned in completing the work, which no action on the part of this office could obviate, some of the returns from California have not yet been received. Assuming the population of California to be 165,000, (which we do partly by estimate,) and omitting that of Utah,* estimated at 12,000, the total number of inhabitants in the United States was, on the 1st of June, 1850, 23,246,301. The absolute increase from the 1st of June, 1840, has been 6,176,848, and the actual increase per cent. is 36.18. But it has been shown that the probable amount of population acquired by additions of territory should be deducted in making a comparison between the results of the present and the last census. These reductions diminish the total population of the country, as a basis of comparison, to 23,074,301, and the increase to 6,004,848. The relative increase, after this allowance, is found to be 35.17 per cent. The aggregate number of whites in 1850 was 19,619,366, exhibiting a gain upon the number of the same class in 1840 of 5,423,371, and a relative increase of 38.20 per cent. But excluding the 153,000 free population supposed to have been acquired by the addition of territory since 1840, the gain is 5,270,371, and the increase per cent. is 37.14.

The number of slaves, by the present census, is 3,198,298, which shows an increase of 711,085, equal to 28.58 per cent. If we deduct 19,000 for the probable slave population of Texas in

* Since ascertained to be 11,381.

1840, the result of the comparison will be slightly different. The absolute increase will be 692,085, and the rate per cent. 27.83.

The number of free colored in 1850, was 428,637; in 1840, 386,245. The increase of this class has been 42,392, or 10.95 per cent.

From 1830 to 1840, the increase of the whole population was at the rate of 32.67 per cent. At the same rate of advancement the absolute gain for the ten years last past would have been 5,578,333, or 426,515 less than it has been, without including the increase consequent upon additions of territory.

The aggregate increase of population, from all sources, shows a relative advance greater than that of any other decennial term, except that from the second to the third census, during which time the country received an accession of inhabitants, by the purchase of Louisiana, considerably greater than 1 per cent. of the whole number. Rejecting from the census of 1810 1.45 per cent., for the population of Louisiana, and from the census of 1850, 1 per cent. for that of Texas, California, &c., the result is in favor of the last ten years by about one fourteenth of one per cent.; the gain from 1800 to 1810 being 35.05 per cent.; and from 1840 to 1850, 35.12 per cent. But, without going behind the sum of the returns, it appears that the increase from the second to the third census was thirty-two hundredths of one per cent. greater than the increase from the sixth to the seventh.

The decennial increase of the most favored portions of Europe is less than 1½ per cent. per annum, while with the United States it is at the rate of 3½ per cent. According to our past progress, viewed in connection with that of European nations, the population of the United States in forty years will exceed that of England, France, Spain, Portugal, Sweden, and Switzerland, combined.

The relative progress of the several races and classes of the population is shown in the following tabular statement:

Increase per cent. of each class of Inhabitants in the United States for sixty years.

Classes.	1790 to 1800	1800 to 1810	1810 to 1820	1820 to 1830	1830 to 1840	1840 to 1850
Whites	35.7	36.2	34.19	33.95	34.7	38.28
Free colored	82.2	72.2	25.25	36.85	20.9	10.9
Slaves	27.9	33.4	29.1	30.61	23.8	28.58
Total colored	32.2	37.6	28.58	31.44	23.4	26.22
Total population	35.01	36.45	33.12	33.48	32.6	36.25

The census had been taken previously to 1820 on the 1st of August; the enumeration began that year on the first of June, two months earlier, so that the interval between the fourth and fifth censuses was two months less than ten years, which time allowed for would bring the total increase up to the rate of 34.36 per cent.

The table given below shows the increase from 1790 to 1850, without reference to intervening periods:

No. of—	1790.	1850.	Absolute increase in sixty years.	Inc. pr. cent in sixty years.
Whites	3,172,464	19,638,019	16,457,555	527.97
Free colored	59,466	428,637	369,171	617.44
Slaves	697,897	3,184,262	2,486,365	350.13
Total free colored and slaves	757,363	3,612,899	2,855,536	377.00
Total population	3,929,827	23,246,301	19,316,444	491.52

Sixty years since, the proportion between the whites and blacks' bond and free, was 4.2 to 1. In 1850, it was 5.26 to 1, and the ratio in favor of the former race is increasing. Had the blacks increased as fast as the whites during these sixty years, their number, on the first June, would have been 4,657,239; so that, in comparison with the whites, they have lost, in this period, 1,035,-340.

This disparity is much more than accounted for by European emigration to the United States. Dr. Chickering, in an essay upon emigration, published at Boston in 1848—distinguished for great elaborateness of research—estimates the gain of the white population, from this source, at 3,922,152. No reliable record was kept of the number of emigrants into the United States until 1820, when, by the law of March, 1819, the collectors were required to make quarterly returns of foreign passengers arriving in their districts. For the first ten years, the returns under the law afford materials for only an approximation to a true state of the facts involved in this inquiry.

Dr. Chickering assumes, as a result of his investigations, that of the 6,431,088 inhabitants of the United States in 1820, 1,430,906 were foreigners, arriving subsequent to 1790, or the descendants of such. According to Dr. Seybert, an earlier writer upon statistics, the number of foreign passengers, from 1790 to 1810, was, as nearly as could be ascertained, 120,000; and from the estimates of Dr. Seybert, and other evidence, Hon. George Tucker, author of a valuable work on the census of 1840, supposes the number, from 1810 to 1820, to have been 114,000. These estimates make, for the thirty years preceding 1820, 234,000.

If we reckon the increase of these emigrants at the average rate of the whole body of white population during these three decades, they and their descendants, in 1820, would amount to about 360,000. From 1820 to 1830, there arrived, according to the returns of the custom-houses, 135,986 foreign passengers, and from 1830 to 1840, 579,370, making for the twenty years 715,356. During this period, a large number of emigrants from England, Scotland, and Ireland came into the United States through Canada. Dr. Chickering estimates the number of such from 1820 to 1830, at 67,993; and from 1830 to 1840, at 199,130—for the twenty years together, 267,123. During the same time, a considerable number are supposed to have landed at New York with the purpose of pursuing their route to Canada; but it is probable that the number of these was balanced by the omissions in the official returns.

From 1840 to 1850, the arrivals of foreign passengers, in the ports of the United States, have been as follows:

1840—'41	83,504	1847	234,756
1842	101,107	1848	226,524
1843	75,159	1849	269,610
1844	74,607	1850†	173,011
1845	102,415		
1846*	202,157	Total	1,542,850

Within the last ten years there has probably been comparatively little immigration of foreigners into the United States over the Canada frontier; the disposition to take the route by Quebec having yielded to the increased facilities for direct passenger transportation to the cities of the Union; what there has been may, perhaps, be considered as equaled by the number of foreigners passing into Canada, after landing at New York, many having been drawn thither by the opportunities of employment afforded by the public works of the province. As the heaviest portion of this great influx of immigration took place in the latter half of the decade, it will probably be fair to estimate the natural increase during the term at twelve per cent., being about one third of that of the white population of the country at its commencement.

Taking for granted the substantial correctness of the above estimates, and the accuracy of the returns during the last ten years,

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* This return includes fifteen months, from July 1, 1845, to September 30, 1846.

† The report from the State Department for this year, gives 315,333. as the total number of passengers arriving in the United States; but of these 30,023 were citizens of the Atlantic States proceeding to California by sea, and 5,320 natives of the country returning from visits abroad. A deduction of 106,879 is made from the balance, for that portion of the year from June 1 to September 30.

the following statement will show the accessions to our population from immigration from 1790 to 1850:

Number of foreigners arriving from 1790 to 1810.....	120,000
Natural increase, reckoned in periods of ten years.....	47,560
Number of foreigners arriving from 1810 to 1820	114,000
Increase of the above to 1820	19,000
Increase from 1810 to 1820 of those arriving previous to 1810.....	58,450
Total number of immigrants and descendants of immigrants in 1820.....	359,010
Number of immigrants arriving from 1820 to 1830.....	203,979
Increase of the above.....	35,728
Increase from 1820 to 1830 of immigrants and descendants of immigrants in the country in 1820.....	134,130
Total number of immigrants and descendants of immigrants in the United States in 1830	732,847
Number of immigrants arriving from 1830 to 1840.....	778,500
Increase of the above.....	135,150
Increase from 1830 to 1840 of immigrants and descendants of immigrants in the United States in 1830.....	254,445
Total number of immigrants and descendants of immigrants in the United States in 1840.....	1,900,942
Number of immigrants arriving from 1840 to 1850.....	1,542,850
Increase of the above at twelve per cent	185,142
Increase from 1840 to 1850 of immigrants and descendants of immigrants in the United States in 1840	722,000
Total number of immigrants into the United States since 1790, and their descendants in 1850.....	4,350,934

The density of population is a branch of the subject which naturally attracts the attention of the inquirer. The following table has been prepared from the most authentic data accessible to this office.

Table of the Area and the number of Inhabitants to the square mile in each State and Territory in the Union.

State.	Area in square miles.	Population in 1850.	No. of inhabitants to sq. m.
Maine	30,000	583,188	19.44
New Hampshire	9,280	317,964	34.26
Vermont	10,212	313,611	30.07
Massachusetts	7,800	994,499	126.11
Rhode Island	1,306	147,544	108.05
Connecticut	4,674	370,791	79.83
New York	46,000	3,097,394	67.66
New Jersey	8,320	489,555	60.04
Pennsylvania	46,000	2,311,786	50.25
Delaware	2,120	91,535	43.64
Maryland	9,356	583,035	62.31
Virginia	61,352	1,421,661	23.17
North Carolina	45,000	868,903	19.30
South Carolina	24,500	668,507	27.28
Georgia	58,000	905,999	15.68
Alabama	50,722	771,671	15.21
Mississippi	47,156	606,555	12.86
Louisiana	46,431	511,974	11.02
Texas	237,321	212,592	.89
Florida	59,268	87,401	1.47
Kentucky	37,680	982,405	26.07
Tennessee	45,600	1,002,625	21.98
Missouri	67,380	682,043	10.12
Arkansas	52,198	209,639	4.01
Ohio	39,964	1,980,408	49.55
Indiana	33,809	988,416	29.23
Illinois	55,405	851,470	15.37
Michigan	56,243	397,654	7.07
Iowa	50,914	192,214	3.77
Wisconsin	53,924	305,191	5.65
California	188,982	—	—
Minnesota	83,000	6,077	.07
Oregon	341,463	13,293	.03
New Mexico	219,774	61,505	.28
Utah	187,923	11,381	—
Nebraska	136,700	—	—
Indian	187,171	—	—
North West	587,564	—	—
District of Columbia	60	51,687	861.45

From the location, climate, and productions, and the habits and pursuits of their inhabitants, the States of the Union may be properly arranged in the following groups:*

There are points of agreement in the general characteristics of the States combined in the foregoing groups, which warrant the mode of arrangement adopted. Maryland is classed, as heretofore, with the Middle States, because its leading interests appear to connect it rather with the commercial and manufacturing section to which it is here assigned, than with the purely agricultural States. Ohio is placed in the same connection for nearly similar reasons.

There seems to be a marked propriety for setting off the new agricultural States of the Northwest by themselves, as a preliminary to the comparison of their progress with other portions of the Union. The occupations which give employment to the people of the Potomac, distinguish them to some extent from that division to which we have given the appellation of the coast planting States. In the latter, cotton, sugar, and rice are the great staples, the cultivation of which is so absorbing as to stamp its impress on the character of the people. The industry of the central States is more diversified, the surface of the country is more broken, the modes of cultivation are different, and the minuter divisions of labor create more numerous and less accordant interests. So far as Texas is settled, its population closely assimilates with that of the coast planting States; but it would obviously convey no well-founded idea of the density of population in that section to distribute their people over the vast uninhabited region of Texas. For the same reason, and the additional one of the isolation of her position, California is considered distinct from other States.

Taking the thirty-one States together, their area is 1,485,870 square miles, and the average number of their inhabitants is 15.48 to the square mile. The total area of the United States is 3,220,000 square miles, and the average density of population is 7.219 to the square mile.

The areas assigned to those States and Territories in which public lands are situated, are doubtless correct, being taken from the records of the Land Office; but, as to those attributed to the older States, the same means of verifying their accuracy, or the want of it, do not exist. But care has been taken to consult the best local authorities for ascertaining the extent of surface in those States; and as the figures adopted are found to agree with, or differ but slightly from those assumed to be correct at the General Land Office, it is probable they do not vary essentially from the exact truth.

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* We have taken the liberty of placing this table before the explanatory remarks, instead of after them, as it stands in the report.—*Ed.*

The areas of some of the States, as Maryland and Virginia, are stated considerably below the commonly-assumed extent of their territory, which may be accounted for from the supposition that the portions of the surface within their exterior limits covered by large bodies of water, have been subtracted from the aggregate amount. This is known to be the case in regard to Maryland, the superficial extent of which, within the outlines of its boundaries, is 13,959 square miles; and is deemed probable with reference to Virginia, from the fact that many geographers have given its total area as high as 66,000 square miles.

JOURNAL OF INTERNAL IMPROVEMENTS.

We are gratified to learn that the spirited movement of the people of Washington county in favor of a railroad from St. Louis to the Iron Mountain, has received the favorable consideration of the Pacific Railroad Company. We copy the following resolutions passed by the Directors, on the 12th inst.

1. Resolved, That the President of the Pacific Railroad Company be, and is hereby directed to have the proper surveys made as soon as practicable, for a branch road from the main trunk of the Pacific Railroad, through Washington county to the Iron Mountain, in St. Francois county; said surveys to be made from such point in the line of the main trunk as may be thought best to attain the object intended, and to sustain the best interests of the community at large, and those of the stockholders of the company; it being understood, however, that it is not the intention of this company to apply the proceeds of their present stock subscription to the construction of the branch contemplated, but by additional subscriptions raised for that purpose.

2. Resolved, That the President is hereby authorized and directed to order further necessary surveys of the Pacific Railroad, from the present termination to the western line of the State, by the most direct and practicable route, with the view to a final location; and to accompany said surveys with the necessary agency to procure the right of way throughout the entire line on each survey.

3. Resolved, That the Directors of the Pacific Railroad Company are of opinion, that it will be to the interest of the stockholders to build the proposed branch road to the Iron Mountain, as soon as one-half of the amount of additional stock, necessary to build the same, shall be subscribed; and books shall be opened to obtain subscription, in the counties of Washington, St. Francois,

Madison and St. Louis, under the direction of such commissioners as the President of the Company shall select.

The President appointed the following Commissioners to open books, to receive subscriptions made under the third resolution:

Thomas C. Johnson, Ferd. Kennett, A. Desloge, at Potosi, Washington county.

Corbin A. Alexander, John Cobb, V. C. Peers, at Farmington, in St. Francois county.

This is a liberal movement on the part of the Directory, and highly creditable to the enterprising spirit of our citizens. From our acquaintance with the various interests that may be brought to bear upon this work, we feel assured of its successful accomplishment. This is the first step in the direction of New Orleans, and will pass over the most difficult part of the route.

Only three months ago, when our project for a railroad to New Orleans first appeared before the public, it was regarded as visionary, and even absurd by many of our intelligent citizens. And a respectable paper of this city, after making a palpable misrepresentation of our views, pronounced this scheme as "simply ridiculous."

Give us a road to the Iron Mountain, and we think few men will then doubt of its being continued south until it connects with the improvements of Louisiana.

The Railroad projects now before the people of Missouri, and in part commenced, present the outlines of a system more extensive than even the hydrographical system of this great valley, and if carried out, will be the means of making St. Louis the first city on the American continent.

A Railroad from St. Louis to New Orleans, to the Pacific, and to the valley of the Red river of the North constitute the great outlines of our system. Charters have been granted for all these works extending to the limits of our own State, and that far it is in our power to carry this system into effect. Let us do our part and others will take up the work where we stop, and this generation will not pass away before the entire plan will be accomplished.

We copy the proceedings of the meeting at Potosi, in Washington county, to show the spirit felt in that quarter in favor of what we denominate the St. Louis and New Orleans road. We copy the entire details for the purpose of preserving the names of all those who have and are taking an active part in this great enterprise.

RAILROAD FROM ST. LOUIS TO THE IRON MOUNTAIN.

RAILROAD MEETING IN WASHINGTON COUNTY.—BRANCH TO THE IRON MOUNTAIN.

Pursuant to previous notice, a very large meeting of the citizens of Washington county was held at Potosi on the 26th ult., being the first day of the Circuit Court.

On motion, Dr. James H. Relfe was called to the Chair, and L. W. Burris appointed Secretary.

The committee appointed at a previous meeting, on the 10th of March last, made a report of their proceedings, and recommended such matters as they thought advisable.

Addresses on the subject of railroads, and particularly of the Branch Railroad to the Iron Mountain—its importance and benefits, furnishing statistics, &c., were made by Thomas C. Johnson, James S. Evans, Wm. Brady, and Wm. Smith. On the question of adopting the report, the same was passed unanimously.

The following resolutions were next offered and passed unanimously:

Resolved, That this meeting view with pleasure and interest the project of a Branch Railroad from some suitable point on the main trunk of the Pacific railroad, through this county to the Iron Mountain.

Resolved, That in the opinion of this meeting, a central route through the county seat would be of far more advantage to the county and to the company than a route running on either edge of the county.

Resolved, that in the proposed road, Washington County, as a county, should own at least one-half of the stock taken in the county, and this meeting approves of the subscription of $50,000 by the County Court in behalf of Washington county, provided the people will sanction it at the polls; and we hereby pledge ourselves to vote for said subscription ourselves, and to endeavor by all proper means to induce others to do so.

Resolved, That we have unabated confidence in the intelligence and public spirit of our fellow-citizens of this county, and that they will do all they can to secure the construction of the branch railroad.

Resolved, That two persons be appointed as commissioners from each township, to take up subscriptions to the Branch Railroad—that said commissioners visit, as far as they can, those persons who would likely subscribe, and that they, on the second Monday of June, 1852, meet together in Potosi—and that said subscription be reported to a committee of five, to be appointed by the Chair, for the purpose of being communicated to the Pacific Railroad Company.

The Chair appointed the following persons to constitute the committee of five, under the fifth resolution, viz: Thos. C. Johnson, James S. Evans, John Deane, Peter E. Blow, and Fermin Desloge.

The following persons were appointed as commissioners, to take up subscriptions in the several townships of the county:

For Benton township—Wm. A. Matthews and F. Desloge.
For Union township—Samuel C. White and Ferd. Kennett.
For Richwoods township—Peter E. Blow and James Hunt.
For Liberty township—George Cresswell and John Clancy.
For Johnson township—Milton B. Hill and Jonas M. Anthony.
For Harmony township—G. C. Wingo and F. Manning.
For Bellview township—E. S. Ruggles and Moses Thomas.
For Concord township—B. W. Yeargin and Robert Highley.

On motion, it was unanimously requested that the following named persons canvass the county and address the people, so as to secure a large vote in favor of giving to our County Court authority to subscribe $50,000 to the Branch Road from the Pacific Railroad to the Iron mountain, viz:

The candidates for the Legislature—Judge John H. Stone, Col. F. Kennet, Wm. Smith, Esq., David E. Perryman, Esq., James S. Evans, Mason Frissell, Esq., Peter E. Blow and Thomas C. Johnson, Esq.

JAMES H. RELFE, Chairman.

L. W. BURRIS, Secretary.

The Committee on Internal Improvements, appointed at the Railroad and Plankroad meeting, held at Potosi, on the 10th of March last, beg leave respectfully to report:

That, by the second resolution passed at that meeting, they were required to employ agents to confer with the Pacific Railroad Company, the County Court of Jefferson county, the County Court of St. Louis county, and the County Court of Franklin county, to ascertain what encouragement in the way of subscriptions they will give to the construction of a plankroad, in the direction of St. Louis, to connect either with the Pacific Railroad in Franklin county, or through Jefferson county with the plankroad proposed from Carondelet to the Merrimac river, according as the Company or the counties might deem themselves interested in one or the other of the two routes.

Your Committee was also required to collect all the information in their power, in regard to practicability of routes, and all other matters connected with the question of securing a direct connection of this county with the city of St. Louis, and report the same together with any suggestions that might occur to any of us, to a general meeting of the citizens, to be held here this day. Shortly after their appointment, your committee met and organized, by

appointing John Dean, as Chairman, and J. W. Haefner, Secretary. They requested Thomas C. Johnson to confer with the County Court of Jefferson county, and ascertain how much they would subscribe to a Plankroad running through that county. They appointed Col. F. Kennett and Thos. C. Johnson, to confer with the Pacific Railroad and the County Court of St. Louis county, and David E. Perryman to confer with the County Court of Franklin county.

It is proper that your Committee should remark here, that prior to the meeting of the citizens on the 10th of March last, a memorial had been drawn up and signed by many of our citizens, which memorial was addressed to the Pacific Railroad Company, and gave many facts and arguments to induce the Company to run their track into this county, and send a Branch to the Iron Mountain. This memorial was communicated to the Board at the time our agent conferred with them in regard to subscribing to a Plankroad.

Our agent attended the County Court of Jefferson county, and addressed the Court personally upon the subject of his mission, and the Court agreed to subscribe $35,000 in behalf of the county, to a Plankroad, running through Jefferson, provided, the people would sanction it at their next August election.

The subjects both of Railroad and Plankroad, were laid before the Board of Directors of the Pacific Railroad Company, and their action thereon will appear by the following resolution, passed unanimously at a meeting of the Board held on the 24th of March last:

"Resolved, That this Board observe with satisfaction, the interest manifested by the people of Washington county, in their memorial to this Board in behalf of Internal Improvements; and that while this Board doubt the power and expediency to subscribe to the capital stock of a Plankroad, yet they believe that the interests of the Company, as well as of that section of country, would be promoted by the construction of a Branch Railroad to the Iron Mountain, at the earliest day practicable."

No communication has been had with the County Court of St. Louis county, because that Court was not in session at the time our agents were in the city, nor has Mr. Perryman visited the County Court of Franklin, because it was deemed unnecessary after the action of the Pacific Railroad Company in the premises.

Your Committee cannot but congratulate their fellow-citizens at the favorable turn which has been given to the movement, and by general consent, the idea of constructing a plankroad has been dropped for the present; and public attention directed to securing a branch railroad through the county to the Iron Mountain. We have received information from many sources that justify us in saying that if we are energetic and liberal as a county, there are

many chances in our favor of securing the construction of a branch railroad at no distant day. That energy and that liberality will be shown by the amount of our subscription and our action individually in regard to the right of way. Your committee believe that next in importance to the alphabet and printing press, stand those inventions which abridge space and facilitate inter-communication between different parts of a country. And of this latter class none has been so efficient as the invention of the locomotive. Railroads have revolutionized the business of modern times. Our minds cannot conceive of a greater blessing to this county, than the construction of a railroad through its entire length. It would be far better for our interests than to turn through our territory the best navigable stream in the United States. It would give a stimulus to business such as was never known before. It would cause every acre of our public land to be entered up at once, and which would soon yield a splendid revenue to the county. It would increase the value of every entered tract of land within a belt fifteen miles on each side of the road, doubling the value of the more remote and trebling and quadrupling the value of tracts still nearer the road. It would make our lands everywhere in this county desirable—they would no longer go begging, and there would be no seller who would not speedily find a buyer at a fair price. New avocations would be started, which would be of immense advantage to our laboring men, and your committee think that they do not exaggerate, when they say that the great increase of business in every existing occupation, and the opening of so many new ones, will make dollars as plentiful then as dimes are now.

To secure so desirable a boon, your committee think that the county and its citizens ought to do for this improvement all they ever expect to do for any. It is worthiest of our noblest energies. It would prove the lever of our fortunes and those of our children and children's children.

Let no contracted views characterize our action in this matter. We want the road—we must have it—and we want all its benefits. Our County Court penetrated with the importance of this project, at their last session, unanimously agreed to subscribe in behalf of Washington county $50,000 to a branch railroad through the lead region to the Iron Mountain, provided, the people would sanction it at the next August election. And thus it is that this important subscription is submitted to the intelligence of our people. If that subscription is defeated, our prospect for a railroad is defeated. If that subscription is sanctioned by our citizens, and an equal or greater amount be raised by private subscription, we have every reason to believe that the road will be built.

Your committee have said that our county must not only have the road but its benefits also. The greatest of its benefits is the increased value given to lands on each side of the road, and these

benefits extend to at least fifteen miles on each side, and sometimes to a greater distance. It is manifest that if the route was laid out on one side of the county, a large portion of our own county would derive no benefit from it at all, and the benefit would be shared perhaps by a county whose citizens never subscribed a dollar. A central route would give to our county every possible advantage to be derived from the road. The lands whose value would be increased by the road would be those of our own citizens, and thus those who pay the tax to meet the interest on our county subscription, get the benefit which that subscription will in part confer. There is but one spot in any county which every citizen at some time or other may be compelled to attend, and that spot is the county seat. It is of importance, therefore, that the county seat be easy of access. A branch from the Pacific Railroad must enter our county on the north, and it so happens that the county seat of this county is in exactly a straight line to the Iron Mountain, and a route through it entirely practicable. We thus secure centrality by making the county seat a point. We stop any contention between the eastern and western portion of the county, as to which shall have the road—we can subscribe understandingly and make our calculations accordingly. Besides, the roads radiate from the county seat to every part of the county; there is situate all the county property, and every man who buys a piece of land, has to come there to record his deed. When the road is completed, our citizens living in the northern and southern portions of the county can travel to Court on the railroad—leaving home by the morning train, and returning the same day by the evening train. To the most remote parts of the county they travel in an hour—they are only out a few dimes for railroad fare, and they save the cost of keeping their horses, which of course they leave at home to plough. For these reasons, in the subscription paper which will be read to you, it is provided that the branch road shall pass through the county seat. Again, it was thought necessary that there should be a limit as to time within which the Pacific Company should commence the construction of the branch. As that company, after completing the part of the road already under contract, which perhaps they will not finish until the end of the present year, may have to build about thirty miles more before they can get to a suitable point to branch, it was thought that the company ought to have two years from the 2d of August, 1852, to commence the road—that is, two years from the next August election, when our county subscription will first be valid. We will thus make a conditional subscription to the capital stock of the Pacific railroad, which will not be valid, unless the company within the time limited commence the construction of the proposed road. Having, fellow-citizens, submitted to you our acts and suggestions, it remains for you and for us to put your and our liberality to the test. We should aid this enterprise according to our ability.—And as upon

the eve of a great battle which was to decide the fortunes of two nations, the gallant tars were told that England that day expected every man to do his duty, so we urge and remind you in this important crisis of our history, that Washington county in her sovereign capacity, this day requires every one of her citizens to do his duty.

John Deane,	Peter E. Blow,
F. Desloge,	John Evans,
G. B. Cole,	J. W. Haffner,
W. A. Matthews,	John Casey,
Thos. C. Johnson.	

Pacific Railroad.

Second Annual Report of the Pacific Railroad Company.—Submitted by the President in behalf of the Directors to a Meeting of the Stockholders, held in St. Louis, March 19th, 1852.

In obedience to the fifteenth section of the original act of incorporation, the directors of the Pacific railroad present to the stockholders an exhibit of the condition and affairs of the company, for the year ending the last Monday of March, instant.

1. The amount of capital stock subscribed, to this date, is $1,560,400. Of this amount, however, only about $1,300,400 is immediately available for assessment, and $50,200 is the estimated amount of contractor's stock. The loan of two millions of State bonds is derived, according to law, by virtue of the above amount of subscription, which we shall receive as fast as the capital stock is collected and expended.

Twenty-five per cent. has been called in, of which the amount paid up, exclusive of the ten per cent. reserved from the contractor's estimates, is $300,670, including one hundred and seventy-nine shares paid in full, leaving unpaid of the calls on the available subscriptions, $25,880. The amount unpaid of the whole capital subscribed, including contractors' stock, is $1,259,780.

3. The total amount expended to the 10th of March, for engineering, including preliminary surveys of whole line, land damages, fencing, real estate, graduation and masonry, and contingent expenses, is $252,074 14.

4. The indebtedness of the company, for which their notes are outstanding, amounts to $30,880 34, which has been wholly incurred in the purchase of real estate, and the settlement of land damages.—The liabilities of the company further extend to the

expenses to be incurred under contracts made, covering the cost of the entire division in construction.

5. The objects and business contemplated seemed to require convenient and more expensive arrangements at the St. Louis terminus than upon any other part of the road. Owing to this circumstance, and the high price of land in and near the city, the cost of the first division was estimated at a higher rate than any other of equal length. By the revised estimate of the Engineer upon the final location of the division the cost was put down at $1,095,000. This was upon the supposition that the division was forty miles in length. But by an increased cost of some $30,000, the length has been reduced to thirty-seven miles, and the grades also improved. This sum is also somewhat increased in the item of land and damages, which have cost us much more than was anticipated, though the proceeds of the sales of surplus lands, will considerably reduce the final cost. The estimated amount required to complete the division, including the running stock, stationary machinery and buildings is near $900,000.

6. The first division, extending from Fourteenth street, in the city of St. Louis, to Franklin county line, 37 miles, was located by resolution of the Board, June 18, 1851, but the work of graduation was not fairly commenced until the 2d of August. Some sickness among the laborers intervened during the months of August and September, which slightly retarded the progress of the work. Several of the original contractors failed also to perform their contracts, and the work undertaken by them had to be re-let. The inclement weather of the past winter was not favorable for the rapid prosecution of the work. All the sections are now in progress, and the graduation of several of them is nearly completed. The number of hands constantly employed during the past season has been from 800 to 1,000, and as an increase is necessary to complete the work within the contract time, orders have accordingly been given to call in additional forces.—The contractors on the first eight sections, extending about eight miles from the city, are required to complete their work by the 1st to 15th of July.—The contractors on the remaining sections are required to finish by the 1st of September.

A contract was closed last fall with the Ebbervale company, of London, to furnish us 4,400 tons of rails of the T pattern, weighing about sixty pounds to the yard, at thirty-two dollars per ton delivered in New Orleans, duty to be paid in St. Louis by the company. The first fourth of the rails to be delivered before the 1st of May; the second before the 1st of July; and the remainder before the 1st of September. The arrival of the first shipment is daily expected.

Three locomotives, one of eighteen, one of twenty, and one of twenty-four tons, are in process of construction; two at Patterson,

New Jersey, and one at Taunton, Massachusetts. The first of these is expected to arrive here in June. Contracts for ties, cars, machinery, etc., as well as for the construction of the machine shop and engine houses, have also been made, and every step has been taken, that seemed necessary or practicable, to complete the first division within the present calender year.

Looking to the further extension of the road, a contract has been made for five additional locomotives to be constructed in this city within the next two years.

The actual amount of receipts and expenditures [apportioned] to the 10th inst., as appears from the books of the Treasurer and Secretary, is as follows:

DEBIT OR RECEIPTS.

On subscription to stocks	$300,670
From State of Missouri	100,000
Bills payable [for land and damage]	30,880 34
	$431,550 34

CREDIT OR DISBURSEMENTS.

Office expenses and contingencies	$8,306 53
Preliminary surveys	20,116 70
Location do.	7,443 10
Interest and exchange account	189 30
Discount on bonds [sold]	950 00
Land and damages	111,651 07
Superintending construction	12,796 15
Fencing account	4,007 77
Graduation	71,690 21
Masonry and bridges	28,853 21
Superstructure	477 10
Machine shop and engine houses	80 00
Balance in hands of Treasurer	164,989 20
	$431,550 34

In the item land and damages, on the credit side are included the amounts of bills payable embraced in the amount of indebtedness above mentioned.

The balance in the hands of the Treasurer consists entirely of State bonds of the city of St. Louis, and of the county of St. Louis.

We received the first $50,000 in State bonds on the 20th of January last. We are entitled, at present, to $150,000 more of State bonds than we have received; but we can only receive them as fast as the proceeds of the sales of the previous issues are expended on the work. The $100,000 received, have been sold nearly all above par. The company will have to make provision for the payment of the interest on all State bonds sold by them, payable in New York, on the first of July, and first of January, in each year.

More than half of the receipts from subscriptions to the stock, consists of city and county bonds, received at par. Until recently we had not been able to turn these securities into cash as expeditiously as we could have desired; but while we have made no sacrifices, the lapse of time has given us better opportunity to make them known, and a very happy consequence is, that these bonds are now coming into fair request. The Pacific railroad State bonds are now held at above par, and there is good reason to anticipate their advance to a rank fully equal to the securities of any of our sister States of the west or south. Not only is the faith of the State pledged for the redemtpion of these bonds—the faith of a great and wealthy State, comparatively free of debt—but the railroad company endorses them, and the railroad itself is mortgaged as further security. These bonds are, therefore, to be regarded in reality as safe, sound and desirable as any State six per cents in the United States. Nor do we know any sufficient reason why the six per cent bonds of the city and county of St. Louis, at the present rates of interest, should not be fully as valuable as the bonds of our most favored counties. We are prohibited by law from selling the city bonds at less than 95 cents, a limitation which we trust will ultimately prove beneficial to the city credit. A proposition is now pending to take all our securities upon terms which we hope will be satisfactory. We do not, therefore, apprehend difficulty in disposing of these bonds, of all kinds, as their proceeds are needed.

The city of St. Louis is the only stockholder to whom we are allowing interest upon payments made on subscription to stock. The city subscribed on condition of such allowance being made payable in stock, and we receive her bonds at par and allow interest accordingly.

The item of land and damages makes too large a figure to be passed over without further explanation. Circumstances seemed inevitably to precipitate the location of our line of road a little in advance of the dictates of wise policy. The right of way should have been first more thoroughly secured. As a natural consequence, we have encountered many vexations and exorbitant claims for damages.

Our road-bed is laid out generally one hundred feet wide, and occupies in this division 474 acres. Every acre was private property.

The cases which have arisen for settlement number 123, many of which have required examinations and adjustment of title, and about 150 deeds. Of these cases ninety-five are absolutely settled and disposed of, twenty are supposed to be settled as to terms, and eight are unsettled, most of them waiting the action of the Circuit Court. For modes of settlement we have resorted to Commissioners appointed by the Circuit Judge, to referees chosen by the parties, and to negotiation. We have generally found that

negotiation is the most economical for the company, and most satisfactory in its results to all concerned.

In settling several claims we have deemed it best to purchase more land than we required for the road-bed. We have, in this way, acquired over twenty acres of valuable land near the city. We have also acquired about twenty-four acres for depots and other buildings. The actual and estimated cost of these lands and land damages is about $140,000. This cost has been incurred in the following districts:—

Within the first four miles	$119,000
Within the next nine miles	16,500
Within the next five miles	2,500
Within the remaining nineteen miles	1,700

While we have come in contact with a few unworthy spirits, yet it is due to a respectable number of landowners to say, that they have met us in a proper tone of enlightened liberality.

It seems here a proper place to observe that, in its effects upon the price of lands adjacent to the line, the railroad is accomplishing quite as much as was ever predicted or promised. The value has been at least trebled. Lands which recently were held at $1 50, are now held at $10—those which were held at $30, have been sold at $100—those which were but lately bought for $300, have been sold for $1,000. There can hardly be a doubt that the enhanced value of lands through the district of country in which our road is laid, already considerably exceeds the estimated cost of the work as far as located. Another perceptible effect is a renewed spirit of industry and enterprise, and the development of new resources. In the interior, it has attracted new settlers, and occasioned the entry of large quantities of public land. Our fellow-citizens seem to be quite conscious of the superior advantages of railroad power, and manifest, as well at the north of the Missouri, as in the southwest and west, an anxious desire to avail themselves of it. With a view to the further extension of our line, some further surveys will probably be found expedient during the current year. This will be rendered the more important in case of the grant of lands, and the right of way, which we are laboring by every practicable means to obtain in a liberal form from the present Congress. Seeing, however, a disposition manifested to attach conditions calculated very much to impair the value of the grant, the board thought proper to inform the representatives from this State, that it would be inexpedient for the company to accept a grant of which the sales were limited to actual settlers in limited quantities, and by which the State was to become an overpowering stockholder at a double valuation, and the general government to have free use forever of the road. The board believing that the lands would be too dearly purchased at such a price, have expressed a preference for the right of pre-emption to a limited quantity of acres, to be selected by the company. We are en-

couraged to hope, however, that a more liberal bill will yet obtain the assent of the House of Representatives, as it has already of the Senate.

With this grant secured, we apprehend no difficulty in pushing on the work rapidly to the western line of the State. Without it, we do not doubt the work will steadily progress.

In any event, looking at the numerous projects of railroads, north and south, and east of us, calculated, as it were, to change the current of the Mississippi, we feel assured that we shall never regret our efforts, however laborious, to hold St. Louis to her true destiny, as the Central City of the Mississippi Valley.

Submitted in behalf of the board.

THOS. ALLEN, President.

Influence of Railroads on the Value of Land.

The experience of Massachusetts, New York, and Ohio, affords abundant illustrations of the great addition imparted to the value of land and other real property by the construction of railroads. In Massachusetts for example, railroads have more than doubled the value of property, as exhibited in the Auditor's reports, and have reduced the average rate of taxation in the State more than one half. The increase of value is not confined to the immediate vicinity of lines, though of course greatest in those localities; in proof of which we may cite the fact that in 1849 the value of property in those counties of Massachusetts through which no railway passes, exhibited an increase, compared with the value in 1840, of $156,000,000, as the effect of the indirect power of such improvements. In Ohio, where the works are of more recent growth, and where, as yet, no complete system is in operation, corresponding results have been announced from time to time, less general, perhaps, in their operation, but serving sufficiently to foreshadow the advantages soon to be diffused over the State. In Georgia, lands that were in the market in 1846, at from ten to fifty cents per acre, commanded in 1849—when the Chatanooga railroad was in operation—from ten to twenty dollars. The same road, in its extension from Chatanooga to Nashville, Tennessee, passed through the counties of Franklin, Bedford, Rutherford, and Davidson; and the Auditor's books for these counties show an advance in the value of their property of $2,554,639 in one year. So of the Mobile and Ohio railroad: lands that had been in the market without a purchaser for thirty years, have since the laying out of that road advanced to three, and in many instances as high as eight dollars per acre. In South Carolina, again, Col. Gadsden, State Superintendent of railroads, affirms "that the immense increased value imparted to lands is from 500 to 5,000 per cent. (*Railr. Jour.*

COMMERCIAL STATISTICS.

Commerce of the United States.

Statistical view of the commerce of the United States, exhibiting the value of exports to and imports from each foreign country, and the tonnage of American and foreign vessels arriving and departing, during the year ending June 30, 1851.

COUNTRIES.	COMMERCE.				NAVIGATION.			
	VALUE OF EXPORTS.			Value of imports.	AMERICAN TONNAGE.		FOREIGN TONNAGE.	
	Domestic produce.	Foreign produce.	Total.		Entered the United States.	Cleared from the United States.	Entered the United States.	Cleared from the United States.
Russia	$1,465,704	$145,987	$1,611 691	$1,392,782	9,817	9,241	3,266	3,239
Prussia	80,469	5,444	85,9'3	20,542	262	184	704	1,635
Sweden and Norway	760,800	21,566	782,366	967,237	2,669	1,545	25,225	9,098
Swedish West Indies	61,157	745	61,902	29,001	278	1,319	.....	.....
Denmark	92,257	19,540	111,797	38,887	.....	199	544	2,086
Danish West Indies	902,687	125 602	1,028,289	235,894	10 386	18,233	5,052	4,175
Hanse Towns	5,405,956	641,491	6,047,447	10,008,264	21,734	16 696	90,539	69,724
Holland	1 911,115	284,054	2,195,169	2,052,706	11,417	9,239	18,262	26,014
Dutch East Indies	204,430	43,140	247 570	410,148	3 329	3,016	150	5,651
Dutch West Indies	366,898	138 089	501 987	572,470	15 923	7,687	7,683	806
Dutch Guiana	85,491	5,582	91,073	89 673	4,222	4 927	763	524
Belgium	2,769 393	142,6 9	2,852,012	2,377,630	16 578	17,654	7 524	3,829
England	105,121 921	8,151,266	113,273,187	90,6'2,238	6'9,592	621,566	411,611	274,283
Scotland	3,811,003	261,937	4,072,940	2,999 710	18,219	18 508	46 215	22,987
Ireland	593 688	1,200	599,888	235,938	5,488	3,142	74,021	12,618
Gibraltar	177 904	52,529	230,433	73,604	509	3,900	1,114	1,962
Malta	61,661	12,238	76,299	26 167	300	1,097	694	746
British East Indies	512 906	175,484	688,390	3,336,335	29,907	49,216	2,813	2,964
Cape of Good Hope	161,891	.....	161,891	123,223	1,223	2 501	238	827
Mauritius	16,882	2,976	19 858	.....	.....	.....	.....	.....
British Honduras	213,806	23,362	237,168	174,526	3,055	3,933	2,524	5,125
British Guiana	540,554	3,734	544,288	44,2'3	2,781	12,001	1,567	4,220
British West Indies	3,913,560	189 949	4,103,509	1,003,871	58,353	88,534	48,315	42,437
Canada	5,835,834	2,093,306	7,929 140	4,956,471	1,013,275	927,013	514,383	516 883
British American Colonies	3,224,553	861,230	4,085,783	1,736,631	62,158	108,235	362,218	592,507

Other British Colonies	.....	.....	.....	182	.....	.....	.....	.....
France on the Atlantic	24,567,067	2,814,668	27,381,735	29,789,124	135,696	147,093	26,498	12,533
France on the Mediterranean	735,018	135.393	870,411	1,926,429	7,146	16.614	11,656	10,627
French West Indies	289,579	20,702	310,281	22,969	3,983	10,888	2,353	871
Miquelon nd French fisheries	3,715	.....	3,715	.....	.....	672	.....	2,072
French Guiana	45,693	651	46,344	28,918	681	1,006	.....	.....
Bourbon	19,853	2,875	22,728	.....	.....	.....	.....	.....
French possessions in Africa	.....	.....	.....	.....	.....	.....	.....	194
Spain on the Atlantic	958,713	1,075	959,788	451,797	9,940	14.688	5,547	12,324
Spain on the Mediterranean	4,457,331	137.472	4,594,803	1,710,776	15,101	9,576	19,590	44,014
Teneriffe and other Canaries	13,540	5,639	19,179	27,718	309	753	746	157
Manilla and Philippine Islands	125.544	7,000	132,544	1,254,688	9,933	15,134	2,549	4,805
Cuba	5,23,9276	1,284,847	6,524,123	17,046.931	355,515	361,732	53,162	29,942
Porto Rico and other Spanish West Indies	961,410	57,209	1,018,619	2,480,329	48,336	36,320	7,874	6,013
Portugal	167,342	4,996	172,338	367,548	961	2,470	5,175	5,176
Madeira	94,589	7,176	101,765	102,448	1,068	3,379	187	1,314
Fayal and other Azores	20,240	1 045	21,285	32,852	1,864	1,532	678	723
Cape de Verd Islands	57.476	2,437	59,913	1.850	111	1,505	.....	730
Italy generally	1,736,834	127,406	1,864,240	2,051,897	.....	.....	.....	.....
Tuscany	.....	.....	.....	.....	5,210	1,513	4.710	485
Sicily	41,743	8,193	49,936	825,924	27,178	2,848	16,473	1,916
Sardinia	310,838	19,401	330,289	2,802	168	6,741	6,204	8,479
Pontifical States	.....	.....	.....	.....	.....	.....	310	.....
Trieste and other Austrian ports	2,265,573	230,894	2,496,467	730,788	814	10,179	6.281	13,371
Turkey, Levant, &c.	162,204	65,529	227,733	901,236	6,704	4,268	2,109	.....
Greece	.....	.....	.....	.....	207	.....	.....	.....
Hayti	1,679,372	167,918	1,817,290	1,889,968	89,940	33,153	7,820	7,586
Mexico	1,014,690	567,093	1,581,783	1,804,779	23,407	31,019	12,701	20,145
Central America	223.302	39,089	262,391	149,856	8.550	27,565	209	4,406
New Grenada	2,507,701	533,121	3,040,822	695,606	166,375	205,390	9,960	12,585
Venezuela	854,779	189,746	1,044,525	2,380,295	17,103	11,761	2,738	2,891
Bolivia	.....	.....	.....	.....	383	189	254	129
Brazil	3,128,956	623,960	3,752,916	11,525,304	63.663	63,629	22,428	7,648
Argentine Republic	659,852	414.916	1,074,768	3,265,382	13,382	11,661	11,005	5,1 5
Cisplatine Republic	32.711	13.078	45,789	19,114	154	1,3 0	1.992	947
Chili	1,608,877	286,428	1,895,305	2,734,746	30,068	48,140	23,396	41,657

STATISTICAL VIEW OF THE COMMERCE OF THE UNITED STATES.

(*Continued.*)

COTNTRIES.	COMMERCE.				NAVIGATION.			
	VALUE OF EXPORT.				AMERICAN TONNAGE.		FOREIGN TONNAGE.	
	Domestic produce.	Foreign produce.	Total.	Value of imports.	Entered the United States.	Cleared from the United States.	Entered the United States.	Cleared from the United States.
Peru	$249,760	$22,238	$272,098	$94,733	20,102	18,920	5,751	13,519
China	2,155 945	329,342	2,485,287	7,065,144	27,587	46,317	11,327	10,198
West Indies generally	76,936	.....	76,936	25.751	.....	.....	.....	.....
Equador	.....	.....	.....	76 692	586	219	410	568
South America generally	36.196	4 ,715	76,911	39.829	245	1,768	1,185	.....
Liberia	.....	.....	.....	.....	.....	257	.....	.....
Africa generally	1,245 361	95.283	1,340.644	1,163,176	12,675	12,978	1,035	595
Asia generally	70,586	1.375	71.961	.....	.....	.....	.....	.....
South Seas and Pacific Ocean	601,146	65,832	666,978	2.298	48.501	54,678	1.040	4,013
Sandwich Islands	.....	381	381	16,852	18.992	36.390	3,215	12,008
Australia	.....	.....	.....	.....	6,381	7,832	27,168	25,223
Northwest coast	.....	.....	.....	.....	137	1,960	.....	.....
Greenland	.....	.....	.....	.....	.....	376	.....	.....
Atlantic Ocean	.....	.....	.....	.....	3,077	6,960	.....	.....
Ionian Islands	.....	.....	.....	.....	846	.....	.....	.....
Indian Ocean	.....	.....	.....	.....	3,393	4,540	.....	.....
Uncertain places	.....	.....	.....	.....	102	.....	.....	46
Total	196,689,718	21,698,293	218,388,011	216,224,932	3,054,349	3,200,519	1,939,091	1,929,534

Treasury Department, Register's Office, January 16, 1852.

N. SARGENT, Register.

Statement of the Commerce of each State and Territory, from July 1, 1850, *to June* 30, 1851.

STATES.	VALUE OF EXPORTS.							VALUE OF IMPORTS.		
	DOMESTIC PRODUCE.			FOREIGN PRODUCE.			Total of American and foreign produce.			
	In Americ. vessels.	In foreign vessels.	Total.	In Amer. vessels.	In for'gn vessels.	Total.		In Americ. vessels.	In for'gn vessels.	Total.
Maine	$1251391	$266096	$1517487	$26959	$6992	$33951	$1551438	$968061	$208529	$1176590
New Hampshire	1287	3662	4949	.....	.....	.....	4949	44682	13346	58028
Vermont	761712	.....	761712	304	.....	304	762016	691268	.....	691268
Massachusetts	7707995	2149542	9857537	1931664	563481	2495145	12352682	23117834	9597493	32715327
Rhode Island	222567	837	223404	14373	.....	14373	237777	295209	15121	310630
Connecticut	419924	13970	433894	184	.....	184	434078	320858	22136	342994
New York	51698245	16406297	68104542	11403676	6498801	17902477	86007019	106568635	34977903	141546538
New Jersey	.....	139	139	.....	.....	.....	139	.....	1111	1111
Pennsylvania	4138261	963708	5101969	228830	25237	254067	5356036	11541212	2627549	14168761
Delaware	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland	3732315	1684483	5416798	198137	20851	218988	5635786	5662066	988579	6650645
District of Columbia	72560	.....	72560	.....	.....	.....	72560	80527	286	80813
Virginia	1550738	1536706	3087444	2624	.....	2624	3090068	227339	325594	552933
North Carolina	236482	190266	426748	4347	.....	4347	431095	125978	80953	206931
South Carolina	8354698	6961880	15316578	.....	.....	.....	15316578	1646915	434397	2081312
Georgia	5224518	3934361	9158879	360	750	1110	9159989	404477	317070	721547
Florida	2519319	1420591	3939910	.....	262	262	3940172	38875	56122	94997
Alabama	11641695	6887129	18528824	.....	.....	.....	18528824	43736	369710	413446
Louisiana	38022609	15945404	53968013	388265	57685	445950	54413693	10134465	2393995	12528460
Mississippi	.....	.....	.....	.....	.....	.....	.....	845	.....	845

Statement of the Commerce of each State and Territory, from July 1, 1850, *to June* 30, 1851.

(CONTINUED.)

STATES.	VALUE OF EXPORTS.							VALUE OF IMPORTS.		
	DOMESTIC PRODUCE.			FOREIGN PRODUCE.			Total of American and foreign	In Americ. vessels.	In foreign vessels.	Total.
	In Americ. vessels.	In foreign vessels.	Total.	In Americ. vessels.	In for'gn vessels.	Total.				
Tennessee	.....	.....	.....	.....	.....	.....	.....	64761	.....	64761
Missouri	.....	.....	.....	.....	.....	.....	.....	622039	.....	622039
Ohio	187158	207967	395125	.....	.....	.....	395125	586460	99871	686381
Kentucky	.....	.....	.....	.....	.....	.....	.....	213576	.....	213576
Michigan	92816	90632	183448	5891	2084	7978	191426	182146	.....	182146
Illinois	98249	16087	114336	.....	.....	.....	114336	3609	1048	4657
Texas	.....	75422	75422	.....	.....	.....	75422	62745	31970	94715
California	.....	.....	.....	.....	.....	.....	.....	2225	11306	13531
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	137931539	58755179	196689718	14205617	7176143	21381760	218071478	163650548	52574389	216224932

NOTE.—No returns of imports or exports have been received from San Francisco in California for 1851.

Summary statement of the value of the exports of the growth, produce, and manufacture of the United States, during the year commencing on the 1st day of July, 1850, and ending on the 30th of June, 1851.

THE SEA.			
Fisheries—			
Whale and other fish oil....	.....	$882,485	
Spermaceti oil	.....	1,044,967	
Whalebone.....	.....	689,662	
Spermaceti candles	.....	195,916	
Dried fish or cod fisheries ..	.....	367,729	
Pickled fish, or river fisher. (her. shad, salmon, mack.	.....	113,932	
			$3,294,691
THE FOREST.			
Product of wood—			
Staves, shingles, boards,	$2,348,621		
scantlings, hewn timber..	205,190		
Other lumber.....	70,095		
Masts and spars	355,477		
Oak bark and other dye....	2,076,395		
All manufactures of wood ..	1,063,842		
Naval stores, tar, pitch, rosin	649,091		
Ashes, pot and pearl.....		6,768,711	
Ginseng.....	.....	100,549	
Skins and furs.....	.....	977,762	
			7,847,022
AGRICULTURAL.			
Product of animals—			
Beef, tallow, hides, cattle..	1,689,958		
Butter and cheese	1,124,652		
Pork, bacon, lard, live hogs	4,368,015		
Horses and mules	198,155		
Sheep	18,875		
		7,399,655	
Vegetable food—			
Wheat	1,025,732		
Flour	10,524,331		
Indian corn.....	1,762,549		
Indian meal.....	622,866		
Rye meal	145,802		
Rye, oats & other grain....	120,670		
Biscuit or ship bread.....	354,286		
Potatoes	179,314		
Apples	71,367		
Rice	2,170,927		
		16,877,844	

Summary statement of the value of the exports, &c.
(Continued.)

Indigo	.....	2,803	
Cotton	.....	112,315,317	
Tobacco	.....	9,219,251	
Hemp	.....	29,114	
All other agric: products			
Flaxseed	18,988		
Brown sugar	29,170		
Hops	11,636		
		59,794	
MANUFACTURES.			145,903,778
Wax	.....	122,835	
Refined sugar	.....	219,588	
Chocolate	.....	3,255	
Spirits from grain	.....	36,084	
Spirits from molasses	.....	239,622	
Molasses	.....	16,830	
Vinegar	.....	16,915	
Beer, ale, porter, cider	.....	57,975	
Linseed oil & spir. of turpen.	.....	145,410	
Household furniture	.....	362,830	
Coaches and other carriages	.....	199,421	
Hats	.....	103,768	
Saddlery	.....	30,100	
Tallow candles and soap	.....	609,732	
Snuff and tobacco	.....	1,143,547	
Leather, boots and shoes	.....	458,838	
Cordage	.....	52,054	
Gunpowder	.....	154,257	
Salt	.....	61,424	
Lead	.....	11,774	
Iron—pig, bar, and nails	.....	215,652	
Castings	.....	164,425	
All manufactures of	.....	1,875,621	
Copper and brass	.....	91,871	
Medicinal drugs	.....	351,585	
Cotton piece goods—			
Printed or colored	1006,561		
Uncolored	5571,576		
Twist, yarn and thread	37,260		
Other manufactures of	625,808		
		7,241,205	
Hemp and flax—			
Cloth and thread	.....	1,647	

Summary statement of the value of exports, &c.

(Continued.)

Bags and all manufactures of	6,376	
Wearing apparel	1,211,894	
Earthen and stoneware	23,096	
Combs and buttons	27,334	
Brushes	8,257	
Billiard tables and apparatus	1,798	
Umbrellas, parasols, sunshad.	12,260	
Leather and marocco skins	13,309	
Fire engines and apparatus	9,488	
Printing presses and types	71,401	
Musical instruments	55,700	
Books and maps	153,912	
Paper and stationery	155,664	
Paints and varnish	109,834	
Manufactures of glass	185,436	
Tin	27,823	
Pewter and lead	16,426	
Marble and stone	41,449	
Gold and silver and gold leaf	68,639	
Gold and silver coin	18,069,580	
Artificial flowers and jewelry	121,013	
Trunks	12,207	
Brick and lime	22,045	
		$34,413,206
Coal		163,977
Ice		106,805
Articles not enumerated—		
Manufactured	3,793,341	
Raw produce	1,166,898	
		4,960,239
Total		196,689,718

TREASURY DEPARTMENT, N. SARGENT, Register.

Register's Office, Dec. 16, 1851.

Iron Mountain and Iron Works of Missouri.

We extract the following account of the ores and iron works of the Iron Mountain and Pilot Knob from the very able and useful report of WILLIAM R. SINGLETON, Esq., principal engineer of the Ste. Genevieve, Iron Mountain and Pilot Knob Plankroad. Mr. Singleton's report contains an interesting description of the country between the Iron Mountain and the Mississippi, a portion of which will be found under the proper head. If his estimates of the agricultural capacities of that region be well founded, of which we have no cause to doubt, the Plankroad from Ste. Genevieve to the Iron Mountain, with a branch to Fredericktown, will prove to be a profitable investment, notwithstanding all the iron made in Southwestern Missouri should be transported over a railroad to St. Louis.

We copy from the "Ste Genevieve Plaindealer:"

"A view of the country over which we propose carrying the contemplated Plankroad, will give a correct idea of the amount of business which may be expected to be done upon the Road, and also the probable increase per year after its completion, and incidentally a glance at the benefits to accrue to the country.

The great deposits of iron in the south-western corner of St. Francois county have long attracted the attention of the scientific man and the capitalist. But a few years ago, however, both the Iron Mountain proper and the Pilot Knob were as nature had made them—without a trace of man's industry to indicate that they had become known. In 1836 the Pilot Knob, being on public land, was entered by Van Doren, Pease & Co., who proceeded to form a company for the purpose of speculation and the building up of two large towns, which were to derive their importance from the smelting and manufacture of iron. They also purchased from the original owners the Iron Mountain, around which was laid off a large city; and from this point to the Mississippi was to be a railroad, with a city at its eastern terminus on the west bank of that stream. The State, many years since, having embarked in Internal Improvements, ordered a survey from St. Louis to the Iron Mountain, which was accomplished in 1839 under the direction of Major Morell. All these first projects failed, and nothing was done until June 1845, when the present Iron Mountain Company, composed of the following gentlemen—Jas. Harrison and P. Chouteau, of St. Louis, F. Valle, C. C. Ziegler and John Scott, of Ste. Genevieve, and Aug. Belmont, Samuel Ward, Chas. F. Mersch, of New York, and Everist F. Pratt, of Fredericktown, under the direction and management of its enterprising Directors,

succeeded in establishing it upon a firm basis, and brought the works into their present successful operation.

The Pilot Knob works were begun in November 1847, under the management of C. C. Ziegler, Esq.—the Company being Bernard Pratte, L. V. Bogy, of St. Louis, C. C. Ziegler, of Ste. Genevieve, and Everist F. Pratt, of Fredericktown, who have brought into active operation the furnace, forge &c.

These at present are the only works now in operation, but by no means the only deposits of iron ore. Immediately south-west of the Pilot Knob is a mountain named by the citizens Shephard's Mountain, in honor of Prof. Shephard, on which is a large deposit of iron ore; there are also near the Pilot Knob six or seven deposits of iron ore of various qualities. Thus within the compass of thirty square miles, or a district five miles from east to west, and six miles from north to south, are eight large deposits, of qualities superior to any known to the world. The fame of the Iron Mountain is "world-wide," and not much behind in their qualities are the several other mountains. Around these mountains are fertile valleys of rich land in a partial state of cultivation, but mostly covered with dense forests of the finest timber, furnishing an abundance of charcoal and building material suitable for all the purposes required. It has been the policy of the companies engaged in these works to secure as much of this land as possible, that they may not be dependent in future upon others than themselves for fuel. These lands, so soon as the timber shall have been removed, must be brought into cultivation, and will, in time, not only be sufficient to support the population necessary to carry on the works, but will afford an overplus for transportation. * * *

"In 1843 a charter was granted by the Legislature of Missouri to C. C. Ziegler, for himself and others, and after some time, Mr. Ziegler succeeded in forming a company, which went into operation in June, 1845, as I have already mentioned. When it will be noticed that through the exertions of Mr. Ziegler, both the Iron Mountain and Pilot Knob Companies were first started, this portion of the State is much indebted to him for the prosperity evidently dependent on these works.

To the Secretary of the Iron Mountain Company, Mr. Nettleton, (during the absence of the Manager, Mr. John G. Scott,) I am indebted for the description of the works of the Iron Mountain Company, and to Mr. Bailey, the Manager of the Pilot Knob, for the notice of the works of the Madison Iron and Mining Company.

At the Iron Mountain, there are two cold-blast furnaces, supplied by three cylinders worked by one fifty horse power engine, the steam for which is generated in two boilers by the escape gasses from the tunnel-head of both furnaces. The charge of one is about 350 lbs., two boxes of 50 lbs. of limestone, in 13½ bushels of charcoal. From thirty to forty charges in twelve hours, they

average about 34-68 in twenty-four hours. The average yield of the ore is from 50 to 55 per cent. When the furnaces are running quite well they have yielded 58 per cent. The ore in the big mountain in its purest state contains 65 per cent of iron.

In the state in which it is found in the little and big mountain, it would be of but little use to the manufacturers of pig iron; fortunately, however, nature has prepared and located the materials so as to enable man to use it in any state, by mixing it with and surrounding it by a ferruginous clay, giving the whole a composition containing any per centage from 65 downwards. On the top of the big mountain, the ore is arranged in masses varying in size, from a small lump to immense ledges, similar to the out crop of sandstone cliffs. It also lays in the sides of the two hills in ore-banks, from which the ore used is taken. In these banks it is in layers of different thicknesses—in pieces the largest of which are easily handled by one man, and about one-half can be screened through a one-inch screen, and requires once more to be screened to be ready for use; and by regulating the size of screens, the quantity of clay remaining with the smaller pieces, can be governed at will. This clay, as analyzed in 1845, contains 75 per cent. of silicia, 20 per cent. of alumina, with a very little iron. It forms a very fusible cinder, when treated in the furnace, with one-third its weight of quick-lime. The use of limestone partially calcined, has been found to be the most economical. The largest pieces are roasted in piles of logs, after which they are broken to the proper size. The ore was dug, burnt, pounded and delivered at the tunnel-head of the furnace for the year 1851, at ninety cents per ton of metal made; this included every expense except cutting and hauling logs for roasting the ore, which is estimated at ten cents per ton of metal made. The limestone is also delivered by contract, for twenty-five cents per ton of metal made. The charcoal is made mostly on the Company's land, and costs from 3¼ to 3½ cents per bushel. The amount used per ton of iron made, varies in different campaigns, from one hundred and sixty to one hundred and eighty bushels per ton. The furnaces are situated on the side of the little mountain, near its northern base—the stacks about eighty feet apart, built of stone—one of thirty-three, the other thirty-five feet high, thirty inches in diameter at tunnel-head, and eight feet at base.

The furnaces have generally run from three hundred to three hundred and twenty days in a year—averaging about 5½ tons per day to the furnace; the produce of 1851, 3,431 tons; the amount shipped to Ste. Genevieve, 1851, 2,408 tons; cost of hauling, 25 cents per 100 lbs.; cost of ton, 2,268 lbs., $5 67; during 1851, the large sale of pig metal at Ste. Genevieve, $25 per ton; freight from Ste. Genevieve to St. Louis, $1 50 per ton; to Cincinnati, Wheeling and Pittsburg, from $4 to $5 per ton. To all of these

cities more or less is sold, and to the two latter, in large quantities.

Cost manufacturing 1 ton, including all expenses,	$12.70
" of land transportation, (at present)	5.67
" charges and commission	35
Cost per ton delivered at Ste. Genevieve	$18.72
Deduct amount saved in transportation when Plankroad shall be completed	2.72
	$16.00
Cost transportation to St. Louis	1.50
Cost of ton in St. Louis	$17.50

Madison Iron and Mining Company, at Pilot Knob—forge has seven fires for making wrought iron, producing 1000 tons annually, 800 of which in blooms; 200 is made into bars for the manufacture of steel; 100 of these bars are manufactured after the same process of the celebrated Swedish hoop L., from which the best steel is made; one hot-air furnace, making 1,800 tons per annum —can make 2,000 tons. The works are situated pleasantly, in the valley of one of the head branches of the St. Francois River, surrounded by mountains, having the far-famed PILOT KNOB towering above—one of the *eight* wonders of the world.

The cost of manufacturing the pig metal, the same as the Iron Mountain; the cost of transportation from the Iron Mountain to Ste. Genevieve will be as follows:

Tolls	a two horse team 41 miles and return	$1.23
	Load of 6000 at 1 cent per ton and mile	1.22
		$2.45

One trip in three days, the expenses will be thus:

3 days, one wagon and team, at $1.25	$3.75	
3 " one driver, at 75	2.25	
		$6.00
Cost of 6000 lbs.		8.45
Cost of ton of 2,268 lbs., at 14 cents		3.20

This amount will be reduced to $3.00 by the addition of 391 lbs. to the load; and from the experience in Plankroads at the East, it would not be perceptible to the horses. A reduction, then, to the iron interest here, of $2.67-100ths per ton, will enable the manufacturers to increase their works, and place them above the chance of competition from the Eastern furnaces."

We copy the following observations of Professor Shephard respecting the quantity and quality of the ore of the Iron Mountain and Pilot Knob, which we find appended to Mr. Singleton's Report:

Remarks of Professor Shephard, of Yale College, and of the Medical College of the State of South Carolina, in relation to the Iron Mountain.

Having visited the Iron Mountain in Missouri in October last, I am happy to add my testimony to that of the numerous observers by whom I have been preceded, respecting these remarkable deposits of iron ore. I am the more strongly disposed to this task, both from the surprise with which I was struck on finding such vast accumulations of mineral wealth lying wholly unproductive in the heart of a country the richest by nature in the world, and from the regret I feel that any unnecessary impediments should delay an enterprise whose execution can scarcely fail of affording an affluent reimbursement to all concerned, and at the same time of greatly promoting the prosperity of the West.

It is not necessary to say anything concerning the topographical features of the region, in addition to what has been already stated by others. My approach to the mountains was from the east by way of Farmington. Before reaching the meridian in which they are situated, I crossed a bed of red granite six inches in breadth; after which, I found myself upon the same magnesian limestone I had left previously to entering the primitive, which limestone is the well known repository of the lead mines of Missouri, as well as those in Illinois and Wisconsin. The extent of this rock, however, in the Iron Mountain region, is limited to a narrow area, in consequence of the unusual development of mountain masses of feldspar, the limestone occupying only the bottoms of the valleys and the more level spaces between the hills. This compact feldspar is of a red color, and is generally much veined and clouded with black from a large dose of iron. Its appearance is jaspery; it breaking, with a conchoidal fracture, and a ringing sound and sharp-edged fragments, which sometimes resemble flint. Occasionally it assumes the aspect of a true porphyry; well-defined crystals of red feldspar occurring disseminated through the compact feldspar basis. The rock thus described is that which bears the enormous beds of which I am to speak; or, rather, the Iron mountains are, in a certain sense, varieties of the formation under consideration. The "Pilot Knob" may be denominated a ferruginous porphyry, or an aggregate of feldspar and specular iron: the latter occurring of a fine (stufgrained) granular structure, and containing imbedded crystals and rounded grains of feldspar, while the iron mountain is a homogeneous deposit of pure, massive,

specular iron, containing only in a few exceedingly rare cases single crystals of feldspar. We have, then, in this extraordinary region, hills, many hundred feet high, composed entirely of a compact cherryed feldspar, variegated with veins of black, by oxide of iron; in the second place, Pilot Knob, a mountain made up in a large portion of specular iron, the feldspar often scarcely exceeding the ore with which it is mixed; and lastly, the Iron mountain, in which the whole mass is so nearly pure iron ore that the observer is forced to search with the closest scrutiny to detect in it even a few solitary crystals of feldspar!

In offering a statement respecting the extent and richness of the ore, I hesitate not to say that it surpasses for quantity and quality, every thing before known in the metallic history of the earth. The Pilot Knob as I have already said, is a peak about six hundred feet in height, and one entire mass of iron porphyry; the granular specular iron being the ore present, not only as forming the basis of the porphyry, but often constituting wide areas of surface in a state of almost absolute purity.

In the iron mountains, however, we find a mass of this ore unmixed with any foreign matter whatever, with the exception only of the rare crystals of feldspar above mentioned. In respect to homogeneity of composition, indeed, it may be doubted if any mass of mineral matter, of its dimensions, equals it among geological formations. All the feldspar, taken together, that fell under my observation during the survey of the mountain, would not exceed a pound in weight; and, with this exception, I repeat it, I could detect nothing save the pure, and hydrous peroxide of iron, whether it was viewed in loose fragments no larger than a pea, or as forming portions of the immense underlying ledge (or bed) that sometimes emerges from the covering of broken ore, and is visible over an area of several square rods.

Desirous of being able to say something concerning the extent of the mountain as the result of my own admeasurements, I took pains to pace the surface in several directions; and I do not hesitate to state that its circumference is at least two miles. Its elevation has, in my opinion, been correctly given as three hundred and fifty feet. I need not add, that the experience of mining operations in other regions, in connexion with rocks of the class here found, fully justifies us in the belief that the bottom of the present mountain masses lies too deep ever to be reached by human exploration.

All intelligent metallurgists must be aware that the specular iron ore is a species of the highest value for the production of iron. Mohs, (the late professor of mineralogy at Freiberg, and now royal professor of the same at Vienna,) who is the authority on subjects of this nature, remarks, in his Natural History of the Mineral Kingdom, that "the specular iron is an ore of the highest importance, and yields a considerable proportion of the iron annually

produced in the different quarters of the globe." It is obvious that the advantages possessed by the ore of this region are very great, arising out of the absence of any foreign materials, which elsewhere render the smelting of iron ores often extremely tedious and difficult, demanding for them the preliminary process of roasting to dissipate volatile ingredients, and the subsequent addition of large doses of flux to effect the withdrawal of other impurities. Here is an ore, in inexhaustible quantities, requiring for ages no blasting, and but trifling labor to prepare it for the furnace, which is so pure from foreign substances that its reduction must be most easy, its yield not less than 70 per cent.

No one who visits the locality can for a moment doubt, situated as it is in a region of singular advantages for charcoal and mining supplies, and at no great remove from the most remarkable channel of in-land water communication known, that it must, at a very early day, become an iron-producing and manufacturing region second to no other on the face of the globe.

Charleston, South Carolina, March 8, 1838.

SOUTHEASTERN MISSOURI.

We extract the following description of the country between Ste. Genevieve and the Iron Mountain from the report of Wm. R. Singleton, Esq., mentioned in the preceding article. Though one of the earliest districts of the State which was settled, but a very small portion of its resources have been developed, and perhaps at this day no part of the West offers more solid inducements to emigrants than Southeastern Missouri.

"Not the least interesting feature in this section, is the great deposit of granite, or the mountain of that material, upheaved by some sudden convulsion of nature. This great curiosity has attracted much attention from the curious—but is only valuable as it may add to the interests of the contemplated Road. From this granite are made all the mill-stones in this section; and a great proportion of the mountain may be quarried for building purposes, and would well bear transportation. Leaving this mineral region as we advance eastward towards the St. Francois River, a distance of fourteen miles from the Pilot Knob and twelve from the Iron Mountain, the country becomes admirably adapted to purposes of agriculture, and while there is much of the land too broken and rocky to be valuable, yet more than two-thirds of it may be rendered available, and one-half is of more than medium quality, and a fourth is in fact superior.

This section, which is the western slope of the valley of the St.

Francois, contains many valuable deposits. On many of its hills are indications of lead ore, which, no doubt, in a few years will lead to important discoveries.

There are several deposits of a very fine quality of burr stone for milling purposes, which must be brought into the market.

This section is also covered by timber of the finest qualities, embracing every description common to Missouri.

Many large tracts now in their primeval grandeur, stand as living witnesses to the want of enterprise in this section of our State, and cry out in deep-toned thunder for roads, roads, roads! adding at every stirring of the breeze their voices to those of the minerals and the crops, for an outlet. But a better day is coming, and not long will these resources remain known only to the hunter and miner. I see in the coming future a glorious destiny for our State. The people begin to feel their backwardness. Hitherto the means of the State have been too feeble for any great work—much more for such expensive ones as railroads. Now, however, a way is pointed out whereby we may benefit ourselves, and that at a comparatively small expense, and truly within our means. Plankroads, from the simplicity of their construction and cheapness of cost, can be undertaken when the objects to be obtained are commensurate with that expenditure; and from their general utility they must enlist all who are along or adjacent to their routes.

Leaving the St. Francois River, and progressing eastwardly immediately on its bank, are the old lead "diggins" on the Delassus league of land, which were worked when this country was under the dominion of Spain; but for many years they have remained unoccupied. Now, however, that the project of building a Plankroad is on foot, the owners of that tract are taking steps to put it in the market—and there is no doubt that ere the completion of the work these mines will be in successful operation.

From the St. Francois to the ridge dividing the waters of that stream from those which run into the Mississippi through the river Aux Vases, comprising a district of ten miles from West to East, and extending from the ridge between the river St. Francois on the South and Big River on the North, (a distance of six miles north of Farmington,) to the mouth of Wolf Creek, (four miles south of that place,) comprising the most northern division of the eastern slope of the St. Francois valley; and containing about one hundred square miles; of which Farmington is the natural centre, and from its happy and delightful situation, must become a place of some manufacturing importance, and a point where goods to supply the farming interest will be sold. In this district are Wolf Creek and branches, Taylor's Creek and branches, Sand Creek, and Back Creek. In all of these creeks are lands of great value for agricultural purposes. But little attention has been given to

this fine agricultural district; yet, upon the opening of an improved road through this section, I feel fully satisfied that but a few years will elapse ere the route must be closed in by farms from the eastern to the western terminus of the valley, a distance of some twenty miles. The general impression has been, and a common one, even among the citizens, that most of the good land is at present occupied; yet. from my notes, I find that about one-fifth only, of the available lands are in cultivation,—thus showing the great room there is for improvements. Again, the character of the roads and the difficulty in reaching a market has superinduced a supineness and an indifference among the cultivators that is lamentable; and I have been met with this argument against the Plankroad, that they could sell all they raised at home. Now, it is evident, that if produce is so much in demand that consumers must go to the producer, it is the very strongest argument in favor of a road; then, the producer can transport his products with the teams he must necessarily feed and otherwise keep idle, thus making a profit on that which must be otherwise a heavy expense. Some farmers argue, that to feed their stock costs them nothing, because they raise themselves what is consumed; yet that same amount would bring a good price in the market.

From the head of the Jonqua, at the eastern edge or terminus of the St. Francois valley, the country becomes very broken, irregular and barren, assuming a different character in soil and timber, and is here termed the Pineries. There is but little agricultural land in this district, although, to some extent, there are points where farms may be opened. In this district are to be found hills of granite, from which fine building stone may be obtained, and which will bear the cost of transportation to the river. This district extends eastwardly to the ridge dividing the river Aux Vases from the Mississippi, and maintains nearly the same character along the line of the Road, which here occupies the main dividing ridge, to the eastern slope of the same, at the head of the Gabouri, in the valley of which stream the Road passes to the river, and through fine farms now occupied by an industrious and thrifty population of German emigrants." * * * * * *

"In Ste. Genevieve county—about one-half of the uplands are susceptible of producing the finest wheat in the State; while the remaining half, too broken and stony for grain, are finely and admirably situated for orchards and vineyards; and where the latter have been tried, no section of the State has produced more and a finer quality of fruit—and the wine made in the vicinity of Ste. Genevieve will compare favorably with any of our domestic wines, either white or red. Hence, when the Plankroad shall have brought into notice the lands along the line of its location, I confidently expect a rapid emigration into this county of those thrifty farmers and good citizens—the German farmers, when it is known that

thousands of acres of such lands are yet subject to entry hid from speculators as yet. The low lands of this county, wherever under cultivation, have proved well adapted to corn and small grain—while the meadow lands are unsurpassed; and the misfortune is, that there is not enough of such lands in a body as to render the haying interest the best in the county. There are, however, many farms where sixty or eighty acres, and one hundred, could be advantageously turned into meadow.

In St. Francois county—the lands are admirably adapted to all the various crops usual in the State. As yet, no one has embarked in the culture of tobacco or hemp; yet both may and will be tried to advantage north of Farmington, on the flat lands and bottoms of Wolf and Taylor's Creeks. Hemp, or tobacco, would pay well, and by proper attention to manuring would prove as profitable as in the northern counties. Should such be the case, a great revenue would accrue to the road from hemp and tobacco. While the great body of tobacco lands are situated north of Farmington, both south, as far as Cook's Settlement, and southwest to the Iron Mountain, are to be found large tracts of land admirably adapted to hemp and tobacco. On the Iron Mountain claim are many very valuable points on this account. The claim contains over seventeen thousand acres, composed of ridges and mountains, with intermediate wide and flat valleys, on all of which the land is well adapted to hemp;—in addition to which there are belonging to the Company large tracts of "entered" land equally as suitable, and whenever the timber shall have been removed for coal, must come gradually into cultivation. The uplands and side hill slopes in this county, wherever cultivated, have proved of suitable qualities for wheat, and well adapted to oats and rye. The best crop, however, and that from which arises the most profit, is hay, and experience has taught that no county in the State is superior; and there is now every indication that the farmers in the vicinity of Farmington will devote much land and attention to their meadows; and if so, a large quantity of baled hay will find its way to the river. In Cook's Settlement the farmers are also convinced of the advantage this crop has over others, and a large quantity may be expected to pass over the Fredericktown Branch.

In Madison county—are some of the finest lands in the State; and while to the traveler who passes over her roads there appears to be much of the county barren, broken and sterile—yet, upon reflection, he must observe how admirably divided off into convenient farm tracts are the valleys which intersect the county in every direction, and where upon some of these lofty peaks from which every hill in the county can be seen, he must not be unobservant of the thousands of valleys of valuable and rich lands which make up the vista.

In the two counties of Madison and St. Francois, immediately

tributary to the Plankroad, are lands in sufficient quantities to support the Road alone. Then the fact must not be lost sight of, that by the experience of eastern roads, where it would seem real estate had reached its highest point years ago, there is a steady increase of ten per cent. per annum. What, then, may be expected in a county where one-third of the lands are yet unentered and can be bought for $1,25 per acre?

On the Fredericktown Branch, within three miles each side, are about seventy-five thousand acres which will be benefitted by, and add to the interests of the road; about fifteen thousand are unproductive, leaving sixty thousand for cultivation—of which twenty thousand are yet subject to entry. When the fact becomes generally known it will stimulate those in search of homes to examine the country, and perhaps locate and become permanent citizens."

Industrial Fair of the South and West.

We would be pleased to present here an extensive view of men and things in New Orleans.

The apathetic condition of the body of the men, and the desperate condition of public affairs make a demand for heroic energy and perseverance on the few noble and leading spirits who have begun to work a material and thorough reformation throughout the South in Agriculture, Manufactures, Mechanic Arts and Internal Improvements.

They are devising systems and projecting measures of public policy arousing the people to promote the interests and redeem the City of New Orleans, that it may no longer continue waning away, but be truly crescent; that the barriers in the way of its progress may be removed, agriculture stimulated, manufactures encouraged, facilities for transportation by steam cars as well as steam vessels established, and that it may maintain, through the instrumentality of art, the right, bestowed on it by nature, to be the mouth piece of the heart of the Mississippi valley.

We hope that on the 20th of June next they will vote to tax themselves, to raise $3,500,000 for Railroad purposes.

This is a bold proposition, but a self-sacrificing heroism is necessary to save the City from a rapid retrogression occasioned by the influence of Railroad enterprises projected from the Northeast.

But although we would be pleased to present here the extensive view above suggested, we have room for a few words only

on the Industrial Fair, and to place in our columns the epitomized speech of the President of the Convention held in New Orleans on the 3d of this month.

This speech is an honor to the heart as well as to the head of the speaker, and shows the object of the Convention and the Fair.

M. M. Cohen Esq., on being chosen President of the Convention, spoke in substance as follows:

Gentlemen—On me devolves the grateful duty of tendering to the delegates from abroad a cordial welcome. With pride and pleasure do I, as the organ of the city delegation, greet you here as approved colleagues in a noble undertaking. We rejoice in an occasion which enables us to *make* the acquaintance of *some* and *renew* that of *others* among you. We will gladly avail ourselves of the benefits which ever arise from an exchange of ideas and a union of energies and intelligence.

Among the many advantages to result from the Fair which we propose to hold, the first and the most precious is that it will create and continue kind feelings among the citizens of different States. Next to this sweet interchange of courtesies and promotion of friendship, I regard as the chief blessing to be conferred by the proposed Fair, the stimulating the skill and enterprise and developing the resources of our country, the spread of commerce and the diffusion of knowledge. Nor among its results would I forget the advancement of agricultural, mechanical and other industrial pursuits.

It will also tend to diversify labor and find new employment for industry, and encourage manufactures. We have the raw material, the provisions, the coal, wood and iron, and should now manufacture coarse cottons, yarns and sails—aye! and build ships too: we would thus save freight, insurance, commissions and interest.

But to pursue this train of thought would lead me too far. I return, therefore, to the immediate objects of our Convention. Among these, you will decide whether or not, it is expedient to hold, at proper intervals, a series of industrial Fairs and Exhibitions in the several States of the South and West. If it should embrace, as far as possible, all the products of human industry—the fruits of the soil and domestic animals—the produce of mines and quarries, the means, methods and products of manufacture, the useful and ornamental arts, and scientific professions, and all improvements, discoveries and inventions—it will be your duty to determine if contributors and exhibitors should be invited without geographical distinctions or limits, and to devise the ways and means for obtaining, (what Kossuth calls) "material aid." It will be yours to arrange and subdivide the objects of Exhibition into suitable classes—to raise a Special Committee for each class, and one General Committee authorized to prescribe regulations for

the Special Committees, and to award medals, premiums etc. You will decide also upon the expediency of appointing an Executive Committee in New Orleans, which can act from the adjournment of this Convention to the opening of the Fair, in promoting its success, and a like Committee for each State represented in this Convention, which Committee will be located in the State, which it represents, and correspond and cooperate with the Executive Committee in New Orleans.

The period is auspicious. It is a time of universal peace, and peace hath her victories, no less than war. It is an age of thought and the triumphs of civilization. The present is the reign, not of the sword and terror, but of the pen and the press, which places in the *general* happiness the renown of the *individual.*

We now admire above all other Caesars, the fame of Augustus, who sat between the poets Horace and Virgil, and boasted that he found Rome of brick but would leave it of marble. Ours is the duty, not of soldiers, but of citizens. To be heroes in the present age we must be benefactors—cheer the people on to excellence—take struggling merit by the hand—awaken dormant genius—lead out latent talent, and find, in the *good of all*, not only the business but the *glory of each.*

TOWNS OF MISSOURI.

We are indebted to the "Missouri Statesman" for the article published in the April number under the above title. Both editors of this Journal were absent from the city while that number was being printed, and by an oversight of our compositor no notice was taken of the source whence the article was derived. We now make our acknowledgment to the enterprising editor of the Statesman, while we assure him and the publishers of papers and periodicals in general that it is our decided policy to credit all matter published by us to the proper source. For while this policy does justice to all, it makes each one responsible for his facts and opinions.

TO OUR PATRONS.

The first portrait of our Gallery will be found in the present number, and we deeply regret, that after having delayed its publication for several days we are compelled to go to press without a biographical sketch for which we have been waiting. We hope one will be received in time for our next issue.—*Editors.*

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August, 1851.

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☞Constantly on hand at *Eastern Prices* (for CASH,) the largest assortment of Packing Trunks, Canvas or Leather, suitable for packing Prints, Clothing or Fancy Articles, Boots and Shoes, &c. Also—Manufacturers of all kinds of Packing Boxes for the city trade. Depot and Office No. 60 Third street, at the "Trunk Emporium" opposite Old Theatre, St. Louis, Mo. April, 1851.

Architects.

BEN. SMITH, Surveyor and Engineer. Surveys made with accuracy and despatch in any part of the city or country; also, Maps constructed, and Plans and Estimates made for Rail, Plank and other roads. Orders respectfully solicited. Office: North-west corner Third and Chestnut streets, St. Louis.
May, 1851.

Flowers.

FLORA GARDEN.—This establishment contains a collection of Plants and Flowers not excelled perhaps by any in the United States. Of ROSES alone there are 230 varieties; and the proprietor has devoted ten years to storing his HOT-HOUSES, 420 feet in length, with specimens of rare and beautiful plants, and flowers from almost every part of the globe. The Garden is pleasantly situated on South Seventh street and affords a delightful retreat from the noise and dust of the city. A commodious SALOON has been fitted up and will be supplied with confectionary, ice creams, and other refreshments suitable to the season and the place. Spirituous liquors are excluded from the premises. Boquets of the richest flowers and most tasteful combination furnished throughout every season of the year.
April, 1851. G. GOEBEL.

Mathematical Instruments.

J. BLATTNER, Mathematical and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 58 North Second street, between Pine and Olive, St. Louis, Mo., manufactures, and has always on hand: Surveyor's Compasses, Levelling Instruments, Theodolite Pocket Compasses, S y-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, hydrometers for acids and salts, Magic Lanterns, Electrical Machines, &c., also, Surgical and Dental Instruments; Pocket, Dissecting, Cupping and self-injecting cases; Taylor's Shears, all sizes; Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; large Scales and Weights for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flaks, Game Bags, &c. ☞All the above Instruments repaired at short notice in the best manner.

Hardware.

WILSON & BROTHERS, Wholesale Dealers in Hardware, corner of Main and Olive streets, St. Louis, Mo.

P. WONDERLY, Manufacturer of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper ettles, Well and Cistern Pumps, and every other article in his line of business, No. 233 Main street, South-east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

Hats.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE & CO., Manufacturers and wholesale dealers in Hats, Caps and Straw Goods, No. 1:0 Main st., St. Louis, Mo.

Saddlery.

HEWITT & STEINACKER, Saddle, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis.

Furniture.

WM. M. HARLOW, proprietor of the St. Louis Furniture Store, manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Slate Yard.

JOHN M. CANNON, Slater, No. 15 and 17 South Sixth street, St. Louis, would respectfully inform the public that, having now completed his arrangements, he is prepared to make contracts for any work in his line. He has in his employ practical slaters, and is well prepared to execute in a workmanlike manner, and with dispatch, all orders entrusted to his care. He keeps constantly on hand, and for sale. Welch slate, rich tiles, sheet lead, slate flagging, slate hearths, copper, brass and iron slating nails, Rosendale cement, and all other articles pertaining to his business. He will strip from roofs zinc, sheet iron, tin, or other covering, and substitute therefor slate. Slate removed from one roof, can be used to advantage on another, which is not the case with any other roofing material. His terms are such as cannot but prove satisfactory. Apply as above.

Brushes.

F. DINGS & CO., importers of German, French and English FancyGoods, and manufacturers of all kinds of brushes, No. 47 Main street, St. Louis, Mo.

College.

JONATHAN JONES' COMMERCIAL COLLEGE, St. Louis, Mo., incorporated by the General Assembly, January 24, 1849. With full authority to "grant diplomas, award degrees, confer honors, and exercise all and singular, the privileges common to Commercial Colleges, authorized by law in other States."—Charter, Sec. 2.

Young Gentlemen wishing to prepare themselves for busine s pursuits, are respectfully invited to call during business hours and examine the mode of imparting instruction, the progress of the pupils, and the superior facilities extended to those desirous of qualifying themselves for the practical duties of the Counting House. Personal references given to above one hundred and eighty (180) Practical Accountants now in charge of Books in this city, all of whom have completed their business education in this institution.

N. B. For CIRCULARS containing information in regard to the terms, the course of instruction and all business connected with the above, call at the "Book-keeping Department," corner of Fourth and Chestnut streets, or address JONATHAN JONES, St. Louis, Mo.

Manufacturers.

THOMAS GREY, Blacksmith and Iron Worker, No. 90 North Second street, between Olive and Locust, St. Louis, Mo., keeps constantly on hand and manufactures to order Ox Chains, Sledges, Wedges, and every description of Mining Tools, also Iron Hobbles and Picket Pins. ☞Blacksmith work for Housebuilders, at the lowest prices. ☞He has always on hand the highly recommended Iron Frame Bedstead, and Camp Stool.

G. A. BAUER,

WOOD-ENGRAVER, No. 19 Chesnut street, up stairs, (between Main & Second str., opposite the City Hall,) St. Louis, Mo. Every description of Wood Cuts, Portraits, Fac-similes, Buildings, Type, Labels, Borders, Notary Seals, &c. &c. I would recommend myself by executing at very reasonable prices, the finest work that can be done in this city.

Proofs of my work can be seen at my office.

Paper Hangings.

JOHN S. WATSON, (late of Wilgus & Watson) No. 54* 40' Pine street, between Second and Third, next door above the old stand of Wilgus & Watson, house, steamboat, sign and ornamental painter, grainer, glazier, whitener and paper hanger; also, dealer in all the latest styles of French and American paper hangings. He keeps constantly on hand and ready for sale mixed paints of all colors, oils, varnishes, Japan, turpentine, white lead, putty, and a large and superior assortment of French and American window glass, which will be cut to any size to suit customers.

Particular attention paid to estimating on houses or steamboats. November.

WOLF & ENGERT, importers and dealers in Paper Hangings, Colors and Fancy Papers, No. 49 South Second street, between Elm and Myrtle, St. Louis, Mo. Constantly on hand, all kinds of oil and water colors, paper-hangings, chimney screens, tester pieces, window shades, marble, marroquin, Gold and Silver paper, painters' and Dutch gold bronze, lead pencils, paint boxes, paint brushes, drawing paper, &c. April, 1850.

Records.

PERSONS wishing to obtain transcripts of records in New Madrid county, can procure them without delay by addressing the undersigned. And to avoid the inconvenience of remitting small sums, the records will be directed to George Pegrim & Co., St. Louis, who will deliver the same upon the payment of the fees. WM. MOSELEY,

Recorder of New Madrid Co., Mo.

March, 1851.

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S. J. SMITH. T. FAIRBRIDGE.
W. D. WOOD. H. B. HAWKINS.

Missouri Foundry.

FAIRBRIDGE, WOOD & CO., manufacturers of Castings, Iron Railings, Iron Window Shutters, Vaults and Doors; Plumbago Concrete Fire Proof Safes; also, Garrison's Portable Saw Mills.

Office and Warehouse No. 118 North Third street. Foundry, corner Clark Avenue and Eighth street. June, 1851.

Saws and Scales.

ST. LOUIS SAW AND SCALE FACTORY.

LEE, GAGE & CO., manufacturers of every description of Saws and Scales. Factory on Broadway, North St. Louis. Office and Ware-room No. 86 Main street, up stairs.

June, 1851.

ROLIN CLARK, PHILANDER BRALEY.
JOHN RENFREW. ALEXANDER CROSIER.

EAGLE FOUNDRY AND ENGINE SHOP, North-west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, portable circular saw mills always on hand, all orders executed with fidelity and despatch.

Manufacturers.

WOOLEN MILL, Canton Illinois.

PIPER & EVERETT, Manufacturers of Cloths, Satinetts, Flanels and Blankets.

Nov. 15th, 1851.

Commissions.

H. W. LEFFINGWELL, Notary Public — R. S. ELLIOTT, Com'r of Deeds.

LEFFINGWELL & ELLIOT, Real Estate Dealers, Auctioneers and Conveyancers, No. 123 Chestnut street, St. Louis, Mo. Real Estate sold on commission, at private sale, or auction. Also, deeds of all kinds written, and acknowledgments taken. Maps of the city and additions to be seen at the office, and information given free of charge. Surveying done promptly and correctly.

GENERAL AGENCY at Dubuque, Iowa, for public lands, real estate, military land warrants, payment of taxes, investigation of titles, amicable collection of debts, and all other business within the legitimate sphere of an Agent's duties, by

CHARLES CORKERY,

Notary Public and Commissioner of Deeds and Depositions for all the North-western States, Missouri included. October, 18 1.

Attorneys.

GLOVER & CAMPBELL, late of Palmyra, Mo., Attorneys at Law, St. Louis, Mo.

JOHN LOUGHBOROUGH, Attorney and Counsellor at Law, office No. 56 Pine street, near Third, (adjoining that of the Clerk of the Supreme Court.

F. HEREFORD, Attorney at Law, Independence, Mo. Office over Thomas & Todd's store.

Refer to Messrs. Thomas & Todd, Smart & Hughes, Coleman & Dallam, Independence, Mo.; Hon. Wm. Scott, Hon. Thos. L. Price, George W. Hough, Jefferson City, Mo.; Tutt & Watson, M. Tarver, Esq., H. Cobb, Esq., St. Louis, Mo.

T. N. WAUL, Lawyer, No. 87 Gravier str., New Orleans, La.

Refer to Magee, Ulhorn & Co.; Lesesne & Moise; Benoist, Shaw & Co.; A. J. Denistoun; S. J. Nicholson; Hill, McLean & Co.; M. D. Cooper & Co.; Lowe, Pattison & Co.; McRae, Coffman & Co.; Cockran, Bullard & Co.; C. C. Lathrop.

Dry Goods.

CROW, McCREERY & CO., Wholesale dealers in Dry Goods, No. 71 Main street, St. Louis, Mo. Wayman Crow, Phoceon R. McCreery, Wm. H. Barksdale, Wm. A. Hargudine, Charles D. Appleton.

WOODS, CHRISTY & CO., wholesale dealers in Dry Goods, No. 75 Main street, St. Louis, Mo. James Woods, William T. Christy, James C. Christy, Robert K. Woods.

Roofs.

C. M. & H. M. WARREN, manufacturers of Warren's Improved Fire and Water-Proof Composition Roofs, and Roofing Materials, which are kept constantly on hand and for sale (with directions for use) to those in the country who may desire to adopt this mode of roofing.

Office and Manufactory, east side Second street, between Almond and Poplar, St. Louis, Mo. Office hours from 10 to 11 o'clock, A. M., and 4 to 5 P. M.

Fruit Trees.

FRUIT TREES AND SHRUBBERY, for sale by the undersigned, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment. The Nursery and Gardens are open at all times (Sundays excepted) for the reception of visitors. Horticulturists and amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty-five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. Their prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondelet, will meet with prompt attention.

JOHN SIGERSON & BROTHERS.

Banking Houses.

PAGE & BACON, Banking House No. 139 Main street, St. Louis, next door to the Bank of Missouri.

N. B. Deposits received, Drafts and Notes from all parts of the Union collected and Exchange on the East and South for sale at all times.

Also Branches of Exchange and Banking Houses at San Francisco and Sacramento Cities, California.

LOKER, RENICK & CO., bankers and exchange dealers, No. 132 Main street, west side, third door north of Vine street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased and sight exchange on the eastern cities and New Orleans for sale at the lowest rates in sums to suit purchasers.

JOHN J. ANDERSON & CO., bankers and exchange dealers on the north-west corner of Main and Olive streets, St. Louis, Mo. Interests paid to depositors, drafts and notes collected, sight and time bills purchased and exchange on the eastern cities and New Orleans for sale at the lowest rates.

L. A. BENOIST & CO., bankers and exchange dealers, No. 83 Main street, east side third door north of Olive street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased, and sight exchange on the eastern cities and New Orleans for sale, at the lowest rates, in sums to suit purchasers.

Horse Shoeing.

JOHN MULLERY, Premium Horse Shoer in the alley, opposite the Post Office, will as usual pay particular attention to the various diseases affecting the feet of horses, and will guarantee to give general satisfaction in either of the above departments.

Lithographic Establishment.

SCHAERFF & BRO., No. 71 Market street, St. Louis, Mo., are prepared to execute anything in the line of lithography; and especially, as they are in possession of the largest sized lithographic presses and stones, they are able to fill orders of the largest dimensions. They take and lithograph portraits and likenesses from daguerrotypes, engrave or lithograph show bill cards, business and visiting cards, diplomas, music, manifests, labels, facsimiles, bank notes, bank bills, bank checks, bill heads, drafts, bills of lading, maps, town plats, &c.

☞ They particularly beg leave to request the special notice of the public to their crayon drawings and colored lithographs, in as much as this is the only establishment in the West, where thisimproved style of lithographing is practiced

Boots & Shoes.

JOHN HOW. WM. CLAFLIN.
ROBT. COOK. JNO. A. ALLEN.

HOW, CLAFLIN & COOK, dealers in boots and shoes, hides, leather, shoemakers' findings, Tanners' oil, Currriers' tools, &c., 412 Main street, (opposite the Bank.) St. Louis, Mo. April, 1851.

Safes.

M'MURRAY & DORMAN, Iron Railing Manufactory, corner of Third and Pine streets, continue to manufacture at the above establishment, all kinds of plain and ornamental iron railing, balconies, bank and jail doors, book safes, fire-vaults, iron window shutters, iron awnings, lightning rods, bedsteads, gratings, and in fact, any thing which can be formed of iron.

Book Printing.

THE ST. LOUIS UNION Book and Job Printing Establishment, No. 35 Locust street between Main and Second, St. Louis, Mo.

CHARLES & HAMMOND, Book and Job Printers, Main street, St. Louis, Mo.

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NORMAN'S, 14 Camp street, New Orleans, La. Books and Stationery cheap Publications, Magazines &c., rich fancy Goods. Prices and qualities to meet your approval.

☞ Orders solicited. ☜

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ARCHIBALD YOUNG & CO., 99 Main st., St. Louis, Mo., Wanzer Minor & Co., 126 Pearl street, New York. Moses Wanzen and Henry J. Minor, New York, Archibald Young, st. Louis.

N. B.—We manufacture all of our own goods, and sell by wholesale at the lowest possible prices.

W. L. & J. BIGELOW & CO., Great Western Clothing Emporium, wholesale and retail, No. 124 Second street, corner of Vine. Baker, Nelson & Co., Cedar st., New York

Land Agency Notice.

WORTHINGTON G. SNETHEN continues to practice Law in the Supreme Court; to attend to cases before Congress; to prosecute Claims and settle accounts against the Departments and Boards of Commissioners to procure Patents at home and abroad; to obtain Pensions and Bounty lands; to collect debts, dividends, legacies and inheritances in any part of the United States and in *foreign countries*; to make investments of funds in Loans and Stocks and on Bonds and Mortgage, and to negociate the purchase and sale of Loans, Land and Patent-rights in any State of the Union. Particular attention paid to California Land Title cases coming up to the U. S. Supreme Court on appeal.

☞ Communications *prepaid*, addressed to W. G. SNETHEN, 5, Carrol Place, Capitol Hill, Washington, D. C., will meet with prompt attention.

TO THE LADIES.

MR. P. A. PIGNERO begs to inform the public, and the Ladies more particularly, that he has taken the store, corner of Pine & Fourth streets, under Planters' House, to which he will remove his establishment for False Hair, of every variety, and for Pomatums, Combs, &c, &c. Mr. Pignero has recently received from the East a large and select lot of Wigs, Cues, and False Hair, manufactured in every style and to suit every taste. He begs for an examination of his stock. The Gentlemen's Shaving and Hair Dressing Saloon will remain at the old stand, opposite the Planters' House.

Washington Steam Sash Factory.

B. PHILIBERT,

WASHINGTON Avenue and 14th street, south side. St. Louis, Mo., makes Doors, Sash and Blinds, Also, Door and Window Frames. Terms moderate.

N. B.—Slitting and Planing done here.

E. F. DIETZ,

BOOK-BINDER,

BLANK BOOK MANUFACTURER,

AND BOX MAKER,

NO. 42 NORTH THIRD STREET, ST. LOUIS, MO.

THE WESTERN JOURNAL & CIVILIAN,

PUBLISHED MONTHLY.

DEVOTED TO

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE, PUBLIC POLICY, AND POLITE LITERATURE.

M. TARVER & H. COBB, Editors & Proprietors.

TERMS—THREE DOLLARS PER ANNUM, IN ADVANCE.

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The Western Journal is designed to embrace every subject connected with Agriculture, Commerce, Manufactures, Mechanic Arts, Mines, and Internal Improvement.

A portion of the work will be appropriated to Statistics, which will be collected and arranged with reference to the leading subjects contained in the respective numbers.

The development of the vast resources of the valley of the Mississippi, and the improvement of the intellectual and social condition of its inhabitants, will be constantly kept in view; and the leading article of each number will be devoted to the advancement of these objects. In attempting to illustrate and give direction to the economy connected with the leading pursuits of the country, the Editors have undertaken more than has been done, or proposed by any other journal with which they are acquainted.

☞ Owing to the enlargement of the work, six numbers will hereafter constitute a volume, and a general Index will be made out to accompany the 6th and 12th numbers.

☞ Publishers of Newspapers who will insert the foregoing prospectus in their papers, once in three months, will be furnished with the work for one year.

LI.

VOL. VIII. · JUNE, 1852. NO. 3.

THE WESTERN JOURNAL AND Civilian,

DEVOTED TO

Agriculture, Manufactures, Mechanic Arts, Internal Improvement, Commerce,

PUBLIC POLICY,

AND

POLITE LITERATURE.

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M. TARVER & H. COBB,

EDITORS & PROPRIETORS.

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ST. LOUIS,

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1852.

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THE

WESTERN JOURNAL

and Civilian.

VOL. VIII. June, 1852. No. [illegible]

ARTICLE I.

Observations on the Investment of Capital.

In an article on the "Financial Prospects of the Current Year," published in volume VII, page 367, of the Western Journal and Civilian, we examined some of the leading principles of c[illegible] in connection with the recently augmented increase of the precious metals, and concluded our observations touching that subject with the following remarks: "If importations of foreign goods should not increase during the present year, the intense demand for money, which has long existed for commercial purposes, will relax, and we may reasonably expect it to become more abundant at the close than it has been, perhaps, for many years." The effects which we anticipated from the elements then in operation have been developed, in part, at an earlier day than we expected. Money, for commercial purposes, has already become redundant in our Eastern cities; and in Great Britain, the commercial centre of the world, interest has touched a lower point than at any period in the history of that country; and still the increase of gold is augmenting. This extraordinary state of the money market is beginning to be felt as a serious inconvenience by a numerous class who rely chiefly on the interest of their money for a support. For while the necessary appliances of living and comfort advance in price, their income diminishes; and hence it is obvious that those who have hitherto lived up to their income, will be compelled to seek new modes of investment or submit to very important retrenchments in their former and present expenses.

Whenever the precious metals increase in a ratio which exceeds the rate of increase in other commodities, money becomes redundant

and the rate of interest declines. This is one of the inherent laws of commerce, subject however to certain modifications: a spirit of speculation, extravagant indulgence in the use of costly luxuries, and other causes may occasion temporary exceptions, but the rule remains unchanged and similar results wil luniformly occur, whenever the increase of money continues to exceed that of other commodities, for a few years in succession.

Now, in view of this well established principle of comparative values, and of the probability that the production of gold will not continue without abatement, but that the rate of increase will augment, we propose to inquire whether more profitable modes of investment cannot be found than the loan of money upon mortgage, or the purchase of State and corporation bonds bearing a reduced rate of interest.

This is an important inquiry: for upon the enlightened views of the people of this and other countries in respect to proper objects of investment, will depend, in a great degree, the prosperity of the country at large, as well as the pecuniary and social condition of that class of citizens who look chiefly to the interest of money for support.

Money invested in bonds, whether private or public, bearing a certain rate of interest, must become of less value to the owner from year to year as the quantity of the precious metals increases, unless the production of other commodities should increase in a corresponding degree. If, however, the production of other commodities should increase in a ratio corresponding to that of the precious metals, then the value of interest for the use of money would continue to bear about the same relation to the value of labor and other useful commodities as formerly, although the rate *per centum* should be either more or less.

The production of things useful is the creation of wealth, and those who with judgments enlightened apply their time and means to that object will experience but little inconvenience from an increase of gold; for the products of their labor and machinery will continue to bear the same relation to their wants as heretofore. Hence, in view of an augmented increase, which is generally regarded as almost certain, it is obviously the true policy of those whose wealth consists in money to invest it in productive objects. And if these objects be well selected, that class will, of all others, be the greatest gainers by an increase of the precious metals, for

it is now in their power to make investments before the relative value of money shall have been materially changed.

In Great Britain, and also in some of our eastern States, where the natural resources have been in a great degree developed, and the more important works of public improvements either accomplished or undertaken, there are comparatively few objects of profitable investment which have not already been seized upon and appropriated. But the Western and Southern States still present a broad field abounding in objects of productive investment sufficient to absorb the increase of the precious metals for many years to come; even if the production of gold should reach the highest estimates of the most sanguine minds. To say nothing of manufactures and mining, one hundred millions of dollars at least could be profitably invested in railroad stocks that would pay dividends which would insure to the owners the means of support to a extent equal to that derived from the usual rates of interest in the past. Railroads may now be regarded as an essential element in production and commerce; and the builders and owners occupy a relation to the consumers similar to that of the producers of other necessary and useful commodities. And, hence, if by reason of an extraordinary increase of the precious metals the relative value of money should decline even fifty per cent., the rates of transportation like the price of labor and provisions would advance in proportion.

It has been the usual policy of those who subsist upon the interest of money, or look to it as the means of increasing their wealth, to avoid the ordinary risks incident to all productive pursuits as well as to commerce; but if the increase of gold should continue at its present rate for a few years, they will be compelled to adopt a new policy and seek a closer connection with the producers. And we can conceive of no other way in which this connection can be formed with so many advantages on their part as by becoming owners of stocks in Western railroads. And no time could be more auspicious for such investments than the present, while all the great lines west of the Mississippi remain open, and their friends are soliciting subscriptions for stock. The Pacific, the Hannibal and St. Joseph, the North Missouri, and the Iron Mountain, or St. Louis and New Orleans railroads, are all great trunk lines for which liberal charters have been granted by the State of Missouri, and it only requires a glance at the map to

convince any individual who possesses even a slight knowledge of the geography and natural resources of the valley of the Mississippi, that these works offer opportunities for profitable investment which will compare favorably with the best railroad stocks of the Eastern and Middle States.

The increase of the precious metals is calculated to present the subject of public improvement to the minds of capitalists in a new light. The operations of the principal lines in the United States have established the fact that railroad stocks are far more productive than bonds; and it is obvious that, while it is almost certain that bonds will become less productive, there are strong reasons in support of the opinion that the value of stocks will advance.

We have presented these views for the consideration of those of our readers who are more immediately interested in the great lines of improvement west of the Mississippi. Two of these lines, the "North Missouri" and the "St. Louis and New Orleans" have not yet been surveyed; and, by showing that there is at least a reasonable probability that the stock would be taken by enterprising capitalists abroad, we hope to incite the Directors, appointed by the Legislature, to organize their respective companies and cause surveys and estimates to be made without further delay.

These are initiatory steps that must be taken before the nature and value of these projects can be fairly brought before the public, or any proposition be made to capitalists.

How long shall we of Missouri submit to the inconveniences which we now suffer from a want of facilities of transportation and travelling similar to those enjoyed by other States of the Union? How long shall our rich deposits of coal and iron remain undiscovered in their primeval resting places, and our fertile soils lie waste and unsubdued by the hand of the husbandman? And, how long shall we struggle against the incessant current that drains this region of its money as fast as it is produced and deposits it in the great commercial reservoirs of the Eastern States? We respectfully urge these inquiries upon the people of Missouri, and trust that they will not regard them as impertinent and idle questions. If it should be said that Missouri does not possess the means of accomplishing such mighty works, we would point to the city of Alton, where a few thousand citizens have, within a few years, by dint of intelligence and well directed enterprise, secured the ultimate construction of two railroads nearly equal in extent to the

ines which we propose in Missouri. And we respectfully ask: will the citizens of St. Louis, and of the State of Missouri at large, stultify themselves in the estimation of the American people by admitting that they are incapable of accomplishing as much as one small city in Illinois? We must leave this question to be answered by him who shall write the history of Missouri. In the mean time, however, our people may rest assured that a neighboring city that is capable of taking the lead in such great enterprises, will in time find the means of taking the lead in commerce and manufactures also; unless they shake off the lethargy which has so long stupified their senses.

The great increase of gold demands the observance of a wise policy in respect to the construction of works of public improvement. Formerly the prosecution of expensive works were calculated to embarras commerce by drawing too large an amount of money from its ordinary channels of circulation; but now the commercial channels are full to overflowing, and depletion has become necessary to sustain trade in a healthful condition. And in no other way can the redundant supply of the precious metals be wisely appropriated as to the construction of railroads and plank roads in the interior. By this means, trade will be steadily confined to legitimate objects; commerce will be increased by the development of new resources, and money will be more generally diffused in districts remote from the great commercial centres. Besides the additional value which the construction of railroads imparts to real estate, the cost of their construction is so much added to the permanent wealth of the State in which they are located; and this additional wealth requires and permanently retains in the country its relative proportion of money as its representative. It is owing to the operation of this principle, in a great degree, that for many years past the circulation of money in the States bordering on the Mississippi, has gradually diminished when compared to the increase of population and labor. The unprecedented increase of permanent wealth in the older States, created by the building of railroads and machinery, so far exceeds the increase of property in the West, that our proportion of the precious metals has been materially reduced within the last many years; and it must continue to diminish until the decline is arrested by creating permanent wealth here, instead of exhausting our labor and natural resources in the production of commodities which

are either directly or indirectly consumed annually by the producers.

While every arrival from California adds to the amount of gold in the Eastern States, the scarcity of money in the West has become almost intolerable; for so large a part of it is absorbed by the machinery and mining operations of Great Britain, and the railroads and other improvements of the Eastern States, that the accumulation in the East affords no relief to this region. Many of our industrious and prudent citizens feel compelled from a want of money to curtail expenses by discontinuing their newspapers and periodicals, and, from the same cause, some are even withdrawing their children from school; ingenious devices to evade the laws are resorted to for the purpose of creating a paper currency to supply the urgent demand for a circulating medium, and yet, to the amazement of almost every one, the ordinary channels of circulation continually diminish in volume.

Feeling assured that these things are familiar to the observation and experience of our readers, we invoke their serious consideration in respect to the means of arresting the retrograde tendency of our pecuniary and social condition. In concluding this paper, we are constrained to reiterate what we have often urged upon the attention of our readers, that a change in the private and public economy of the people of the Western States is essentially necessary to their further advancement in wealth and intelligence. Let us dream no longer of growing rich by exchanging the products of our soil for foreign fabrics, but go to work like men resolved to repair the errors and follies of the past. Bold, energetic and constant action is required at our hands, and let us prove to the world that we possess sufficient intelligence to comprehend, and manhood to perform our whole duty, as well to the present and succeeding generations as to ourselves as individuals.

ARTICLE II.

Practical Effect of the High-furnace and Cupola Compared.*

Comparisons of the theoretical effect of the high-furnace with the practical, to show the losses of it, have already been made by many and able men; it is not my intention, to increase their number by one. But I shall compare the practical effect of the high-furnace to the practical effect of another—the cupola, and from the result draw conclusions, which will perhaps be of some use. It is the rational way to improvements, to find out the very point of a fault, a loss, and its primitive causes, and then to think how to amend it.

But to begin: In the *high-furnace* 1 pound of charcoal reduces, carbonizes and melts in an average not more than 2½ pounds of mixture (iron ore and flux) with about 40 per cent iron.

1 pound of coke not more than 2 pounds with the same per centage of iron.

In the *cupola-furnace* 1 pound of coke melts 11 pounds of pig iron.

Every practical man will see that I put down here the effect of the high furnace rather high.

That of the cupola will by many, perhaps, be considered too; but it is not so. If you construct your cupola and tuyeres (carry the wind &c.) carefully and correctly, you will have the above effect. I had for many years in a cupola, 6 feet high, constructed by myself, 11 lbs. of pig iron (Scottish No. 1 and that of turf-iron ore) to 1 lb. of coke as the regular full charge; the iron got beautifully liquid, and even the whitest pig-iron became grey in the cupola; proofs enough of high temperature.

We compare now the results of *cokes* in both furnaces.

In the *high-furnace* the 2 pounds of mixture, melted by 1 lb. of coke contain by 40 per cent. 0.80 lbs. of pure iron, which are united in peroxide with 0.3429 lbs. of oxygen. These 0.3429 oxygen give carbonic oxide with .....0.2[illegible] lbs. carbon. 0.80 lbs. iron make pig iron with about 4 p. c...0.0[illegible] " "

For reduction and carbonization are really used .....0.2915 " "

Therefore for the melting process .....0.678[illegible] " "

If we suppose the ashes to be.....0.0300 (3 per c.)

1.0000 lbs. of coke.

* Mr. F. A. Kayser, the author of the following article, has been [illegible] to us as an individual of great practical experience, as a smelter of iron, [illegible] as a scientific and practical Chemist. We beg to commend his essay to the attention of those engaged in the Iron business.

So in the high-furnace by cokes:

0.6785 lbs. of carbon melt	0.8333 lbs. pig metal
and at the highest rate	0.7667 cinders
	1.6000 lbs.
Or 1 lb. of carbon	1.2282 llb. pig metal
and	1.1300 " cinders
	2.3582 lbs.

In the *cupola* now melt 0.97 lbs. carbon (0.03 ashes) ..... 11 lbs. pig metal
or 1.00 lb. carbon ..... 11.34 " "
(cinders not calculated), which is 4.8 times as much, as in the high-furnace. But the cinders of the high-furnace want more heat (caloric), to be made sufficiently liquid, than the pig iron in the cupola. Let us investigate this:

The melting points of these substances as well as high temperatures in general were till some years ago estimated too high. Even now we cannot say that they are found *absolutely* with certainty, but we have them at least *relatively* correct, and that is sufficient for our purpose.

The melting-point of cinders of a good run is by the careful experiments of Plattner found in an average.....1438°Celsius,
of pig iron (grey) by Daniell and Prinsep.....1530° "
This is relatively correct; and absolutely too, if the melting-point of platina is at 2534° Cels.

As for the specific heat, I have no knowledge of any direct experiments on that of the cinders; however it is probable from their chemical constitution, that they have a similar, as common glass; I think we will not err much, if we take it down as 1.5 times as great as that of the grey pig iron.

We shall find, then, the relative consumption of heat in both furnaces by the melting process thus:

a. for the *high-furnace*:

1.1282x1x1530x1.1300x1.5x1438=4316.5,

b. for the *cupola*:

11.34x1x1530=17350.2,

which shows the effect of the cupola still four times as great, as that of the high-furnace.

If we compare the result of the high-furnace by charcoals with that of the cupola by cokes, we find even then by a similar calculation, that in the cupola one pound of carbon in the coke has 2.9 times the effect of that of one pound of carbon in the charcoal in the high-furnace, although it is known, that charcoal does more by weight, than coke, and so this comparison is not fair.

But in the above calculation we took the figures for the melting points, *i. e.* the temperature found in the commencement of melt-

ing; now we have to make the cinders in the high-furnace liquid enough to get rid of them, and to facilitate the separation of the pig iron sufficiently, and that wants certainly a higher temperature than the mere melting point; we have farther in most cases to give such a high temperature in the high-furnace, as is necessary to make the iron grey, although the expulsion of graphite don't depend alone on the temperature, but in part on the consistence of the cinders. The temperature for all these purposes of course, is the same, because we see it done at the same time. The question now arises, if we may explain the disadvantageous result of the high-furnace by this needed higher temperature.

Experience, and some reflections combined with it, answer most decidedly—no, we can not!

My cupola above mentioned had a temperature sufficient to change white pig-iron into grey, and this shows already the same temperature, most charcoal high-furnaces possess (nay more—the process of turning white iron into grey is in the cupola more difficult, wants even a higher temperature than in the high-furnace, on account of the cinders,) and doubtless the cinders of these high-furnaces would have been melted in that cupola to the same liquidity, as in the high-furnaces, because the same temperature is needed for both purposes.

Besides that, many furnaces produce purposely only white iron together with a very easily fusible cinder, without being able to carry a heavier burden than the above mentioned. The fact is, the quantity of heat required commonly to give to the cinders the sufficient liquidity, is not *much* greater than in the melting point, but *when* it is indeed great, when we want a much higher temperature than the common, then we simply—have it not; the cinders are too stiff, too thick, and the only remedy is, to make them easier fusible. The *real* difference in these temperatures is indeed so insignificant, that in practice it vanishes; so we can often carry a higher burden of ores, the cinders of which are less fusible, but which offer no difficulty to reduction, than of such very fusible ores, which will melt before they are perfectly reduced, and the mixture of which we therefore have to compound, so as to diminish this great fusibility, in order to carry a heavier burden, and to get better and more iron (turf iron ore, silicated iron ores). And now compare the construction and training of both furnaces:

Would we not have the same temperature, as in any high-furnace, and would we not be able to carry still a much heavier burden in the cupola, if we build them as high as substantial, and run them as continually as we do the high-furnaces; if there is any difference in the temperature of both, it would disappear entirely. I think, nobody will deny that.

We see by all this that the practical effect of the high-furnace is indeed only about ¼ of that of the cupola, in spite of the disad-

vantages of the latter; shortness of its campaign, greater loss of heat through the thinner walls and the trundlehead (less height); disadvantages, which we can not bring into calculation, but which are certainly great, even for the mere melting process. We see farther, that the cause of this bad result of the high-furnace is not in the process of melting, not in a necessarily higher consumption of heat for the sake of it; it is not in those other losses, the evaporation of water, carbonic acid &c., which were going on in the upper part of the furnace, where the cupola don't reach at all; and it is not in the escape of the consumed coal as carbonic oxide (instead of carbonic acid), because that is just the same in the cupola.

The cause of this loss can therefore only lie in the processes of reduction and carbonization.

Let us now examine, in what way these processes consume so much coal, and whether that is a necessity or only the consequence of the peculiarity of our furnace-process, of our present manner in making iron, and so may be remedied.

At first sight, we might suppose that the process of reduction consumes heat, and, consequently, coal—besides that carbon, which is necessary in substance to deoxidize the iron ore and form carbonic oxide with the oxygen of the hitherto iron oxide, and which we brought already into calculation. In this process oxygen as well as carbon are gasified, and this, certainly, requires heat; the question is, whether that is not balanced by the heat, *produced* by the process. I don't know of any direct experiment to investigate this subject, but we may come to a satisfactory answer by the combination of known facts. The combustion of coal (charcoal or coke,) in the atmospheric air to carbonic oxide evolves at least red heat; as now a full red heat is not required to reduce the iron oxide by coal, so it is clear that in this latter process no heat can be *consumed*. But we have another, a practical proof for it. We know that by rich ores (55—60 p. c.) the burden cannot be carried quite as heavy as by poor ores (30 p. c.), but the difference on an average is not greater than can be explained by the greater want of carbon in substance for the reduction and carbonization of the larger quantity of iron in the rich; and if at some places there is a perceptible difference besides, we can explain this easily and naturally, without resorting to an absorption of heat in the process of reduction, as we will see afterwards. If such an absorption existed, and to such a degree as to explain the above found loss, then the difference in the burden by rich and by poor ores would be indeed very great, and that is decidedly not so. I think, this negative proof settles the matter.

What, then, is the reason of this small effect of the high-furnace, even compared with the imperfect cupola?

I will come to the point: It is the want of OPPORTUNITY for reduction and carbonization, the want of touching points between

coal and iron ore, both substances being solid, and moving only in falling down, and so finding the said opportunity only in a limited degree. But let us look closer into it:

After the first preparations of the mixture in the higher part of the shaft are made, the process of reduction and carbonization is going on from that point in the shaft of the furnace where the temperature begins to be high enough for it, till downwards to that point where the temperature is high enough for melting. We call the space between these two points the "height of reduction," and this height combined with the rapidity of the downward movement of the materials (of melting) gives the "*time of reduction*" (and carbonization), which is a changeable but very important moment of the furnace-process. The iron ore requires a certain time in running through the height of reduction for the perfection of the process to find sufficiently opportunity for it, and it wants the more time, the larger the pieces are, the richer the ore is, and the more it offers other difficulties to this chemical process. This time depends on the quantity of wind, the dimensions of the furnace, and the fusibility of the materials, which also decide to a high degree about the production, the quantity of pig metal, produced in a certain time. Because, now this process is left in a certain degree to accident, which, in the downward movement, brings coal and iron ore in contact; it is not possible for all pieces of the ore, to be equally reduced and carbonized; some are more, some less, and they together must give an average product, as the process of melting, the trade or other purposes demand it. Therefore, we know by experience, that we have to charge not more than a certain weight of mixture (on a certain weight or volume of coal) to produce the pig metal so as it is wanted; and this weight found by experience, is the above mentioned light burden. Are we surpassing it, the furnace soon will run badly, i. e. one part of the iron ore does not find sufficient opportunity for reduction and carbonization, arrives in a raw state at the melting place, melts more quicker with the cinders together and down, diminishes the time of reduction, makes at the same time the cinders too liquid so that the pig iron turn grey; the cinders then envelop more the coals, preventing them from burning, and carrying them with themselves out of the hearth; the temperature gets lower, and so the evil is increased by itself, till a temporary much lighter burden puts a stop to it. It is not the want, the insufficiency of coal, as the material for the process of reduction or of temperature below, which causes this bad effect, but the want of opportunity for those necessary processes. To reduce &c. this larger quantity of iron ore well, more opportunity, of course, ought to be given, that is, the height, and with it, the time of reduction made greater, and that being not done and indeed impossible (if the old production is wanted,) in the present state of the furnace, its run turns

bad. An increase of the quantity of wind would, perhaps, leave the height of reduction in the commencement unchanged, or make it even higher, but it certainly would shorten the time of it (melting quicker), and so accelerate the evil, as experience shows. Indeed *increase* of the quantity of wind would not do, but *diminishing* it would do very well, if the hearth be not too wide; it remedies actually in practice many a time, and it does so, because it diminishes the rapidity of the melting process, and increases so the time of reduction, *no matter if the temperature is somewhat lowered by it or not.*

This shows clearly, that we have not to charge so much on account of the temperature below, but only to keep the height and the time of reduction great enough to give sufficient opportunity for reduction and carbonization.

I could say a great deal more about this matter, but as I am not writing a book about the whole high-furnace process, I think, this is sufficient, and proves the correctness of my opinion.

The question now is, whether this imperfection of the high-furnace process, which causes such truly immense losses of fuel, can be helped or not.

I am inclined for some reasons to answer: Yes! But only in a new way.

I have an idea, and made the plan to avoid this loss, at least, partially; in fact, to produce iron in a different manner from the present, and very probably more advantageous; but I don't think to publish it before it is tried.—However, I should be very glad to find a proprietor of iron works or any other gentleman who feels sufficiently interested in it to see the trial made, and to communicate with me about it.

F. A. KAYSER.

St. Louis, Mo., May 12, 1852.

Letters addressed to the undersigned, and given to the care of the Editors of this Journal, will be answered as promptly as possible.

Article III.

NEW ORLEANS AND ST. LOUIS RAILROAD.

Report of Col. Buckner H. Payne of New Orleans.

To the Honorable the Executive Committee and Board of Commissioners of the New Orleans, Opelousas, and Great Western Railroad.

The undersigned in behalf of himself and Co-delegates to the Railroad Convention that assembled at Alexandria, on Monday 3[illegible] inst., begs leave respectfully to report:

That in pursuance of their appointment they attended, and found many citizens, as well as delegates from Rapides and the adjoining parishes present. After organizing, the Convention desired to know the particular objects and views entertained in the city by the friends of the New Orleans, Opelousas and Great Western Railroad Company, and what co-operation was expected from the Parishes.

In answering these two questions, it was stated: That the road starting in the town of Algiers, opposite the city, was designed to connect with the State of Texas, on the Sabine river, at or near 32° of latitude, unless Texas herself should indicate some other point more advantageous. That should the parallel of 32° be finally adopted, by looking at the map, it would be seen, that the road after leaving Opelousas, would traverse portions of Avoyelles, Rapides, Natchitoches, Sabine and De Soto. That the people of Arkansas finding the road approached in one degree of her boundary, desired a branch to be extended up to the line between the two States; and that they would extend it to Little Rock, and across their State to the Missouri line. Since this suggestion, St. Louis and the people of Missouri have shown a decided wish to extend this branch, so as to form a continuous line of Railroad communication between St. Louis and New Orleans. By an examination of the map, it will be seen, that almost a straight line can be made from New Orleans to St. Louis, and that, when finished, these two sister cities would be within thirty hours of each other; thus connecting the whole vast territory west of the Mississippi river, and making St. Louis the *great central inland*, and New Orleans the *great commercial* city of the Confederacy. It will be seen also, that the great trunk through Texas and westward, and the branch to St. Louis when completed, will afford facilities of transportation and travelling to a vast extent of country, the volume and value of whose products, when developed, no mind can fully grasp. But the questions—ought such a gigantic scheme be now undertaken in all of its details? If undertaken, can it be accomplished? And if so, what and where are the means? In an-

swering these questions in explanation and affirmatively, it will be seen what *aid* and what *co-operation* are expected and desired of *the Parishes?*

But before entering in these questions, let us see what the States beyond our boundary propose to do to carry forward these great works, and then we shall see clearly, what Louisiana and New-Orleans must do, if their part of the work is executed.

Texas, on her part, proposes to meet us at the Sabine river, with a grant of land to the Company, that if prudently and properly managed, will be sufficient to construct the road to El Paso, a distance of 1040 miles. From this statement it will be seen, that neither New Orleans nor the State will be called upon to contribute a single dollar for the construction of *this* extension. But it may be said, that land is not money; and that railroads cannot be built without money; and that lands, and especially rich lands, cannot immediately be made available to that purpose. Without controverting these suggestions, we say that, when the Louisiana end of the road is completed to the Sabine, a distance of 324 miles, the company can raise by mortgage on it, two or three millions of dollars, and with this money construct and grade some four hundred miles of the road into Texas. This development of 400 miles will bring into market such portions of the land granted to the road, as will enable the Directors to realize from sales of it sufficient money to construct the road over the remaining part of the route, to El Paso. The road thus completed, will bring into ready market the remaining land, and enable the company to pay off the original mortgage debt on the road from New Orleans to the Sabine river. From this statement, it will be seen, that our efforts are to be directed *now* to raising the means, to build the road through our *own territory* to the Texas boundary. On the other hand, neither Arkansas, Missouri nor St. Louis require us to contribute a dollar toward the construction of the Branch to St. Louis. To Arkansas this branch is of vital importance. It opens the centre of that vast State, by the nearest line to New Orleans. To southern Missouri it is not less valuable. A portion of the Pacific railroad is now under contract from St. Louis. The people of Missouri in the neighborhood of the Iron Mountain (which is in the direct line towards New Orleans) are earnestly moving to unite with this road. In Washington county alone the people have proposed to raise $100,000; and the continuation of this road to New Orleans is a cherished object of the people of Missouri. The development of the vast resources of the Iron Mountain is of incalculable value to the whole region west of the Mississippi river, and in view of the supplies of railroad iron and other iron, they can be made to surpass the world. Nay, the very iron needed for this road can be taken from the mountain, manufactured on the spot, and doubtless paid for by subscriptions in the capital stock

in whole or in part. This point alone is worthy of profound consideration.

This statement of facts brings us down to the simple proposition: Will New Orleans and the people of Louisiana *build their part of this great road and its St. Louis branch*, and perfect that *within their own territory*, which their sister States are so anxious should be accomplished, in order that they may have access to New Orleans, at all times and all seasons, with the rich productions of their soil and mines? Will New Orleans insure the completion of this vast enterprise by a subscription of a million and a half of dollars? This sum will be sufficient beyond all doubt for its accomplishment in addition to the private subscriptions. We say, this will secure the achievement of this vast enterprise. For the whole is but the embodiment of but one great idea, that of *concentrating forever upon New Orleans and St. Louis*, two cities, sisters in fortune and sisters in destiny, the whole commerce of that great empire lying west of the Mississippi River, and for which they have now no competitors! *We can do it.* And the subscription by the city of one and a half millions of dollars, in addition to the private subscriptions of our citizens, is *all* that is necessary to insure it beyond all preadventure! No friend of New Orleans can be found voting against it. The liberality with which the Parishes have already subscribed to the road, in the few days the books were opened, as far as St. Landry, proves incontestibly that the country will contribute the remainder by voluntary subscription and taxation. If the city of New Orleans, then, set this noble example, we expect the Parishes to follow. Is this expectation unreasonable? We think not. We take it for granted, then, that both, city and country, will so act. With this fact admitted, let us cast our eyes upon the map again, and we shall find the names of thirty two Parishes directly interested in its success,—viz: Orleans, Jefferson, St. Charles, St. John the Baptist, St. James, La Fourche Int. Ascension, Assumption, Terrebonne, St. Mary, St. Martin, Vermillion, Lafayette, Iberville, St. Landry, Avoyelles, Rapides, Natchitoches, Sabine, De Soto, Caddo, Bossier, Claiborne, Bienville, Catahoula, Caldwell, Wachita, Jackson, Union, Morehouse, Franklin and Winn. These parishes comprise more than three fifths of the population of the State, without including Orleans, and about two thirds of the Senators and Representatives in the State Legislature. That they will vote aid from the State, in supplying iron or to make up any small deficiency of means that might be wanting, it would be unreasonable to doubt. These 32 parishes contain about 35,000 square miles, (about five times as large as Massachusetts,) to this add Arkansas with 52,-198, and that of Missouri, lying south and west of St. Louis, of 43,123, Texas with 325,520, and the Indian territory of 190,-404, and we have an aggregate of 648,245 square miles, equal to ninety-two such States as Massachusetts, in territorial extent, and

more than treble all the States, that New York has connected wit her now, by all her railroads and canals combined, including Ohi Indiana, Illinois, and Michigan! A large portion of the trade the rivers above St. Louis must concentrate upon that city, a find its way to New Orleans. Now is the time to grasp and hol forever the trade of this immense country. Let no heart faint quail, because of the magnitude of this grand undertaking. T delay action now, is to invite ruin. For us to hesitate, is but t stimulate northern enterprise, to step in and snatch the prize fro our hands. To delay *now*, is to delay forever. To the man wh says: wait a little longer, we would point out the lost commerc east of the Mississippi river. A few years ago, and that commerc was all ours, but now gone—lost forever—lost by our want o forecast, energy and lack of commercial patriotism. If a sacri fice has to be made (if that can be called a sacrifice to build thi road), now is the time to make it. By making the sacrifice now, and constructing the road quickly, we can retain our fortunes, an restore our lost honors.

What are the encouragements to stimulate us in these our effort and present sacrifices? Let us look to the onward and upward ad vancements in wealth and prosperity of New York as a State an the city—Boston and Massachusetts—Philadelphia and Pennsyl vania—Baltimore and Maryland, for examples, to nerve our energies for the triumphant success of our great enterprise. Let u look at St. Louis, and the first report of the President of the St Louis and Pacific railroad to the stockholders. It was made 29t March last. In speaking of the mere effect of the *location* o the road, in enhancing the value of landed property, the President Mr. Allen, says: "The effects of the railroad upon the price o land adjacent to the line, is quite as much as was ever predicted or promised. The value has been at least trebled. Lands which recently were held at $1.50, are now held at $10. Those which were held at $30, have been sold for $100—those which were lately bought for $300, have been sold for $1000!"—Subscriptions to build this road were made by the city of St. Louis—by the counties—by private subscriptions, and by a loan of State bonds. That by the counties and the city of St. Louis, was on long time, bearing 6 per cent. interest, a tax being laid, as is contemplated by our laws, to pay both, principal and interest. Speaking of these bonds, the President says: "More than half of the receipts from subscriptions to the stock consists of city and county bonds, received at par. Until recently, we have not been able to turn these securities into cash, as expeditiously as we could have desired; but while we made no sacrifices, the lapse of time has given us better opportunity to make them known, and a very happy consequence is, that these bonds are now coming into fair request. The Pacific railroad State bonds are now held above par * * * Nor do we know any sufficient reason, why the city and county

bonds, at the present rate of interest, should not be fully as valuable * * * A proposition is now pending to take all our securities upon terms, which we hope, will be satisfactory." These extracts are of importance as showing, that similar views were entertained and expressed in the first report, made to the Opelousas convention, and written 26th April 1851, and as showing the advance in landed property on that road, in less than one year, to have trebled the cost of constructing it. Had not the interests of New Orleans, in the estimation of many of its friends, demanded more urgent and stringent measures to secure the success of our railroad enterprises, we think, that subscriptions, made on long time, by the city and parishes, as pointed out on the 9th page of that report could have been made available as cash, for the purposes of railroad construction. Had this method been adopted, the tax payers would have had the benefit of the railroad dividends for at least fifteen years to *aid*, if not effectually, to pay in full, both principal and interest, as they became due. But as the views of gentlemen, entitled to high consideration, have prevailed, and six years fixed upon to pay, it will be a paramount duty to finish the roads in the shortest possible time, that the tax payers may have whatever benefit may accrue to them, from the construction of of these regenerators of our common prosperity.

The importance of the St. Louis branch, like the present stem, can never be overestimated. That it will take the principal trade and travel to and from the West, cannot be questioned. The position of St. Louis, to centralize an immense trade, is beyond all doubt such as to point her out distinctively as the *great central inland city* of this continent. This line of road to New Orleans will be the shortest that can be made, if the advantage of the producing and travelling interests are considered. This road will act as a vast entrenchment to intercept all Northern efforts to pass westward of the Mississippi river with their improvements; and secures forever the whole trade to New Orleans. Persons going to St. Louis from New Orleans, by this road, have the advantage of passing thence to any or all of our Western and Lake cities, without retracing a single step, but which cannot be effected by any other route. The mineral wealth of the country, traversed by this road,—the founderies and manufactories that must spring up along the line,—the agricultural resourses of its unrivalled soil, and the beauty of its landscape scenery, all combine to make it *the great road* of travel, whether for pleasure or business. New Orleans must become the *grand importing* as well as *exporting city* for every State, city, town and village west of the Alleghany mountains. Even if the subscription of a million and a half be a total loss in the way of dividends, and the road is nevertheless built, yet, *that* loss will be to the contributors the greatest gain, that ever resulted to New Orleans from any investment in the general advancement and wealth of our State and city.

It affords the undersigned pleasure to say, that to these views the Convention heartily responded, and demanded that subscription books be sent to all the Parishes beyond St. Landry, for voluntary subscriptions. And resolutions were adopted, inviting subscriptions by the Police Juries of the various Parishes under existing laws, so as to place the whole line to the Sabine and to the Arkansas boundary under contract, as speedily as possible. Resolutions were also passed, directing their Committees to correspond with the other Parishes, and to call a Convention, to assemble at Shreveport as early as practicable, to secure harmony of action, and unity of effort in consummating this enterprise, alike beneficial to all.

It is respectfully suggested, that immediate steps be taken by this board, to call a Convention at Little Rock or St. Louis, to be composed of delegates from St. Louis, Missouri, Arkansas, and Louisiana (the latter to be appointed by yourselves) to confer together as to the best means for speedily locating and building this *great branch*, uniting St. Louis and New Orleans, and opening the vast resources, west of the Mississippi river, to our trade, manufactures and commerce.

All of which is respectfully submitted.

BUCKNER H. PAYNE,
Chairman of delegation.

New Orleans, May 8, 1852.

Memorial to Congress from Louisiana.

To the Senate and House of Representatives of the United States.

The undersigned, a Committee appointed by the President and Directors of the "New Orleans, Opelousas and Great Western Railroad Company," for the purposes of memorializing the Congress of the United States for a grant of land in aid of said road, and the right of way through all the public lands on the line of said road, begs leave to represent:

That the "New Orleans, Opelousas and Great Western Railroad," starting from Algiers, on the opposite bank of the Mississippi river, to New Orleans, will pass through and develop the resources of thirty-two Parishes of the State of Louisiana. The superficial extent of these Parishes is about thirty-five thousand square miles, and contains about three fifths of the whole population of the State, and much the largest portion of our cultivable lands. The public lands of the Government in this region, now

unsold, cannot be deemed of any very great value, as none of them have been in market less, and most of them more than twenty years.

This road is intended to pass into the State of Texas, at or near the parallel of the 32° degree of north latitude, and to cross that State to or near El Paso, on the Rio Grande. In its route across Texas it is designed to pass through the city of Austin, the capital of that State, and ultimately to reach the Pacific ocean as soon as possible.

Before reaching the Sabine river, however, on the parallel of 32°, a branch is to be thrown off to the State of Arkansas, in the direction of Little Rock, the capital of that State, and to be extended beyond to the Missouri line, and thence on to the city of St. Louis.

From this delineation of the proposed road, the Congress of the United States will see, that it is *national* and *international* in its character. National, as affording the *shortest*, *easiest* and *least* expensive route, from the Atlantic to the Pacific States. National, as affording to the General Government speedy and cheap transport of troops and their supplies, to the Indian and Mexican frontiers, and thirdly, affording protection to the people and country. In this respect, to the United States this road will be invaluable. It is *international*, as connecting Louisiana, Arkansas, Missouri and the States and territories, north and west of St. Louis, with the great Southern emporium of commerce, New Orleans. Nor does it lose this international character on the trunk leaping westward towards the Pacific.

The valuation of the taxable property of the Parishes through which this road is proposed to pass, is over 83 millions of dollars —that of the city of New Orleans is about 81 millions. The Company has been organized under the accompanying charter. Books of subscription were opened for fifteen days, and in that time private subscriptions were received amounting to a sum between seven and eight hunderd thousand dollars, on which the first instalment of five per cent. has been paid. A board of Directors was elected on the 3d inst. (May), consisting of Christopher Adams (President), Ambrose Laufeau, M. O. H. Norton, J. Y. D'Egana, J. W. Stanton, A. Chiapella, Z. D. Denagre, R. B. Sumner, L. Leon Bernard, A. B. Seger, J. H. Overton, E. H. Martin, Rob. Cade, Alexander De Clonet, H. Hopkins, Joshua Baker, Sam. P. Winder, and Geo. S. Guion, and the company is now completely organized and at business. Under a recent law of the Legislature authorizing it, application has been made to the city council of New Orleans, for a vote to be taken authorizing a subscription of one and a half million of dollars, to be paid by a direct tax upon real estate, with every prospect of success. The parishes are actuated by similar self-sacrificing devotion to this enterprise, and

will furnish their full proportion of means necessary for the speedy accomplishment of this work, to the Sabine on the one hand, and to the boundary line between Arkansas and Louisiana on the other. Texas and Arkansas will meet us with enthusiastic determination to cooperate in the prosecution of this grand design.

Now, therefore, we, your petitioners, pray the Congress of the United States, to grant to this company the right of way through the public lands, for the construction of this railroad, from the town of Algiers, opposite the city of New Orleans, passing through Opelousas, to a point on the Sabine river, at or near the 32d degree of north latitude; and for the construction of a branch, to start from the main trunk, at the most suitable point, to pass into the State of Arkansas, in the direction towards Little Rock, and thence, by the most eligible route, to the city of St. Louis, in the State of Missouri, *via* the Iron Mountain, with the right also, to take all necessary materials of earth, stone, timber &c., for the construction thereof. And they further pray, that in consideration 1st. of the advantage this road will be to the General Government in the facilities it will furnish for the protection of our immense frontier on the West, from Indians and Mexicans, and the immense saving of money, it will be the means of effecting—the security it will give to the citizens, and the comforts it will insure to the officers and soldiers along the Mexican and Indian frontiers, in obtaining regular supplies. And 2d., that the United States cannot and will not be called upon to grant any land for the construction of that part of the road, through the State of Texas.—They, therefore, pray the Congress of the United States, to grant all the lands of the United States, within ten miles of the said road and its St. Louis branch, on each side; or its equivalent in other lands. And for all lands that may have been disposed of previously, scrips to be issued to said company, with permission to lay the same on any public lands subject to entry. These lands to be patented to the company, as the line is *bona fide* placed under contract, the one half to be disposed of by the company, by the time the road is completed, and the remainder within six years thereafter.

Signed J. H. OVERTON,

Chairman of committee to prepare memorial.

B. F. FLANDERS, Secretary.

ARTICLE IV.

Bars and Channels at the Mouth of the Mississippi.

While, for some time past, a spirited discussion has been carried on through the New Orleans papers, respecting the method of deepening the channel of the Mississippi at its mouth, the subject of affording "material aid," towards the accomplishment of that object, seems to occupy but little attention in Congress. Nor do the people of the Mississippi valley, beyond the limits of Louisiana, appear to take any interest in the matter. We have frequently urged the vital importance of this subject upon the consideration of our readers; but to common minds the locality appears so remote, that they can scarcely comprehend, how their interests can be injured by obstructions in the mouth of the Mississippi, or benefitted by removing them. We do not now propose to reiterate the arguments heretofore advanced by us upon this subject; but respectfully call attention to the following communication, which we extract from the "New Orleans Commercial Bulletin."

THE BAR AT THE MOUTH OF THE MISSISSIPPI.

This obstruction to the navigation of the river has of late become so serious as to threaten the most alarming consequences to our port. To-day a vessel has been released from the bar, which cleared eighty days since. It would have been quite possible for her to have delivered her cargo in Liverpool and to have returned, in the time that she laid there in the mud. These detentions are now matters of daily occurrence; even the steamship *Georgia* was recently detained there several days. These detentions are now so usual that they necessarily enter into a merchant's calculations when he buys produce here for shipment to foreign ports, and he so adjusts his price as to cover the probable loss by detention, and all the produce sold here for export must therefore sell for so much per cent. less as will insure its speedy passage over the bar. The American ships arrive at their ports of destination sooner than British ships; hence the difference of one-sixteenth of a penny (one-eight of a cent,) per pound freight in favor of American ships. Does it not follow, as a legitimate conclusion, that, if the average time all ships are detained at the bar equals the usual delay of shipments by British ships, all produce which must cross the bar will be worth exactly one-eight of a cent less than if there were no detention at the bar, and that, if the average time of detention were longer or shorter, the loss in price would be greater or less in proportion? It is true that the merchant is the first to

feel this loss, but it ultimately falls upon all classes *interested in produce here in the remotest degree*, or merchandise of any sort. It is always necessary for us to understand fully the nature and extent of an evil, before we can adopt any measures which will probably obviate it. So much has been said of late as to the extent of the evil, that I think the public mind is fully alive to the subject, but I observe that there is much controversy as to the mode of obviating it. It is my intention to throw out a few suggestions upon this subject—it is of the greatest importance to our community to arrive at *correct* conclusions in this matter.—*S.*

Such facts are pregnant with meaning. And the people of the West must be blind, indeed, if they cannot perceive, how their interests are connected with the navigation of the Mississippi, at its mouth as well as throughout its whole course. It is owing to the indifference, manifested on this subject by the inhabitants of this region, that no appropriation has been made by Congress to remove the obstructions that lie in the way of their commerce; and we invoke the people, and especially the press of the entire valley of the Mississippi, to unite in demanding of Congress such appropriations as will insure the accomplishment of some plan that will open the way to New Orleans, for the passage of the largest vessels employed in commerce. This is doubtless practicable, and this much it is our right and duty to demand, cost what it may.

The following observations by C. G. Forshey, Civil engineer, respecting the nature of the bars at the mouth of the Mississippi, and his suggestions touching the manner of deepening the channel, correspond more nearly with our own views than anything we have seen upon the subject. And the people of the western States owe him a debt of gratitude for his laborious investigations of a subject so intimately connected with their prosperity.

Mississppi Bars.

Extract of a letter from C. G. Forshey to Albert Stein, May 20, 1852.

SIR:—Your criticisms of Ellet's doctrines of the phenomena at the bars of the Mississippi river, and his method of removing them, I have read with much attention. You have certainly demolished his castle, but in so doing, have spent and wasted much good ammunition, which might have been saved for a more formidable antagonist. But as you have, apparently, a magazine of the same on hand, you can occasionally spare some for small game.

Our papers seem not very willing to admit any thing, controverting Ellet's doctrines; two attempts made by myself, to show

his errors, when I thought their propagation likely to be mischievous, have failed to find acceptance with our editors. In my late letter to the Mayor, all that portion relating to Mr. Ellet's report was omitted by the press.

Let me show you, that you have attached too much consideration to his report:

During the past year, I have made two very careful detailed surveys of the bars of the river, at S. W. Pass, and Pass a l'Outre. The first was during the high water season, and the second at extreme low water. I am not at liberty to communicate the measurements and surveys, but I can say what *I did not find.*

Let me say, then, that the alleged "refluent sub-current of Mr. Ellet, forming the bar by abrading the bottom of the sea, and carrying the silt into the river's mouth," *has no existence.* I never, on any single occasion, at high tide or low tide, rising or falling tide, high river season, or low river season, discovered any thing, which by distortion even, could be made to favor such a conclusion. Its existence is either purely fabulous, or inferred from some very temporary eddy, about the outer margin of the bar. You prove that it is *highly improbable.* I prove that *it does not exist.* His plan of tabular dredging is based upon it. You think it strange that the Department, or Bureau of Topographic Engineers approved it. Far from it. It was too absurd for refutation; and Col. Abert satisfied himself, by a satirical notice, and an ironical recommendation that, "in case it should be approved, and met by an adequate appropriation, Mr. Ellet be employed to superintend its execution!"

Any one who has any adequate knowledge of the tenacity of the bar mud, (although it is soft enough to yield to its own pressure, and obtain nearly a level,) must know that a single one of the twelve or sixteen boiler tubes, which Ellet proposes to attach to the sides of his dredgeboat, in the oblique position, reaching from above the water surface, to a depth of two or three feet into the bar, would anchor, *fast*, the strongest towboat on the river. So far from the mud of the bar, rising up in these tubes, by the forward motion of the boat, and being discharged in the surface, outward-bound current, where it would *float* (bless the mark! !) out to sea, every tube would choke, the moment they struck the bar, and would not raise any portion of the mud three feet.

I perceive by the tenor of all your valuable papers, relating to the Mississippi river, that, in application of principles, and the recognition of those at work, forming, and transforming channels and bars, there is very little difference between us. But in relation to *practicabilities*, there is some difference. * * * * *

For instance, you contend that the dissipation of the water over the banks weakens its energies, and renders it incapable of maintaining a good channel; and that the concentration of all the wa-

ters, at the mouths, upon one or two passes, and their bars, would effectually cut those bars in twain, and give deep water over them.

There is no one principle for which I have longer or more earnly contended, than this necessity of concentrating the waters. The channel-making power is wholly dependent upon it. My opposition to the general doctrine of outlets, has rested upon this principle, and I have continually urged it, and for so many years, that it looks to me hackneyed. The principle is just as true, at and about the bars of the river, as in the channels above.

The contraction of any pass by jetties at the mouth, (if practicable) the closure of the useless passes, the concentration of the water and consequent acceleration of its current, by any means, must carve a channel through the present bars.

But the next question is, how long will this remain, and what must follow it?

The arrest and diffusion of the water, and the subsequent loss of its transporting and abrading force, must occur outside of the jetties, and beyond the present bars. The sediment must sink to the bottom, when this occurs, and a like bar must form at the new point of equilibrium of forces.

How soon this would occur, neither of us can predict; but there is not a rapid declension of the bar, nor very deep water immediately outside. Instead of being steep, as I had been informed, it is very gentle in its declivity; so that, at half a mile, it is not more than 10 fathoms, and at 3 miles not more than 30 fathoms. In this, our soundings first made in November, 1850 (under Mr. Ricker's expedition,) much disappointed me. I had thought with you, that if we could throw the point of arrest of river forces, over a precipice, into the deep sea, our work would be accomplished, and the channel made permanent.

Nor did I, nor Talcott, find any reliable, transverse current, outside the bar, capable of transporting the sediment thrown there. These sub-currents are whimsical, and very rarely possess any force. The drift wood on the surface is usually carried westward, because the winds are more generally from south and eastward, than from a north and westward direction.

The bar has progressed almost a mile, since Talcott's survey, according to measurements I made under Mr. Ricker's survey. It is more accurately determined by measurements recently made, which I cannot give you; but the progress is, at the S. W. Pass, about a mile in fifteen years; not directly seaward, but laterally westward, where was deep water, in Talcott's survey of 1838. The progress at Pass-a-l'Outre is nearly the same. At this rate of travel of the bar, which is now full one and a half mile wide, it appears to me scarcely worth while to attempt to cut the bar in twain, at any considerable expense, by your method, or to awat the closure of the useless passes, especially as direct experiments

prove, *that the bar mud may be rendered navigable*, and be somewhat depressed, in the channel way by continued harrowing.

I will agree, however, that the effect I would expect to produce, would be much aided and increased by the works you would recommend; and indeed my plan would be rendered, for some time, unnecessary, if yours could be applied promptly. We want an *immediate effect*, and with a small appropriation, the method of harrowing could be applied in a few months; while the other must take longer, and cost vastly more, to test fairly its utility and obtain a result.

There are many considerations for the application of the method you advocate, in addition to what I contend for. The greater cost and delay are not arguments for their abandonment, at all, but for the application of a prompter and cheaper remedy, as likelier to be met by an early appropriation, and to render immediate relief.

Some of my reasons for the adoption of your methods are these: The tendencies of the river to divide into several mouths, by forming new channels, renders navigation always precarious. The loss of water through the Jump has undoubtedly been instrumental in closing the Northeast Pass—for many years the main, and always the most desirable channel for commerce. A similar crevasse from near the head of that pass into Garden Island Bay, now threatened, may destroy the South-west Pass. We cannot be certain of permanent navigation in any Pass, with any improvements we may adopt, so long as the channel-making force is liable to be diverted and dissipated. These crevasses or new channels should be stopped, and the waste of waters over useless passes, arrested in such manner, that a temporary diversion of a portion of the water through a newly made mouth, might be borne mithout the loss of a navigable channel, until we could arrest the break.

But, for the immediate wants of commerce, I would recommend a powerful boat, with a harrow or rake dropped astern of her rudder, and dragged continually over a channel, 150 feet wide in each pass, (South-west and a l'Outre,) until a fair test of its virtues be had.

I would then commence a contraction of the channels, by an attempt to close the Jump, the north channel of Pass l'Outre, the North-east Pass, below Balize Bayou, the South Pass, at its head, and the intervals between the mud islands, at the South-west Pass —or as many of these as surveys should indicate as practicable.

ARTICLE V.

The Memorial of M. F. Maury,

A LIEUTENANT IN THE U. S. NAVY,

*To the Senate and House of Representatives in Congress assembled, respectfully showeth:**

That he has for a number of years been engaged with investigations concerning the winds and currents of the sea, particularly as it regards their bearings upon commerce and navigation.

In the course of these investigations, many facts and considerations have been suggested which have a practical bearing upon some of the great interests of State, and your memorialist hopes, therefore, that he may be pardoned for spreading before your honorable body some of the results and conclusions to which he has been led.

On account of the currents which flow through, and the winds which blow over, the Gulf of Mexico, the Gulf of Mexico is, for many of the practical purposes of commerce and navigation, a closed sea. Hence commercial men and navigators have maintained that the real outlet of the Mississippi river to the ocean is not at the Balize, but in the straits of Florida.

Similar agents have placed the commercial mouth of the Amazon, not where that river empties into the ocean, which is under the equator, but they have removed it far up into the northern hemisphere, and placed it near the commercial gateway of our own Mississippi.

If drift-wood from the Andes, in the interior of South America, be set afloat upon the head-waters of the Amazon, and if another log be felled from the Rocky mountains, in the interior of North America, and cast upon the head-waters of the Missouri, these two pieces of drift, taken to represent the currents of their rivers and of the seas into which they empty, will each, obeying the force of the winds and set of the currents, be drifted out upon the broad ocean through the Florida pass.

The prevailing winds at the mouth of the Amazon are the S. E. trade winds, and no vessel coming out of the mouth of that river can stand to the southward on account of the land, nor to the eastward on account of the winds and currents, both of which are directly in the teeth of all sailing vessels that attempt to steer such courses.

Passing a few leagues to the north, the outward-bound Amazonian then enters the region of the N. E. trade winds, which compel her, unless she be bound into the Caribbean sea, to stretch off to the northward and westward until she has passed through the region of the N. E. trades, and gained the parallel of 25 degr. or 30 degr. north, by which time she finds herself off our own coast.

Now, this is the course of all vessels under canvass from the Amazon, whether they be bound to Rio de Janeiro, in Brazil, to India, or to Africa, or any of the markets of the Pacific around Cape Horn, or to the commercial marts of Europe. Be their destination what it may,

* Presented in the Senate by Mr. Hunter, of Virginia, May 10, 1852.

unless it be along the Spanish main, or through the Caribbean sea, they must first steer north to cross the belt of N. E. trades, and in doing so they must pass by our doors.

Therefore, for the peaceful and practical purposes of commerce and navigation there is but one highway from the mouth of the Amazon. On that highway the southern Atlantic ports of the United States occupy the position of half-way houses on the great market-way that is some day to lead from the valley of the Amazon to the rest of the world. That market-way we overlook. The winds and the waves have placed the keys of it in our hands. Let us not, by non-use, suffer it to fall into the hands of others,

If we regard the whole continent of America at one view, we observe that in the equatorial regions it is nearly cut in twain to receive an arm of the sea, skirted on the east by the chain of islands, the Great and Little Antilles, which extend from the peninsula of Florida on the north to the mouth of the Orinoco on the south; that this land-locked arm of the sea is separated from the Pacific on the west by a narrow neck of continent called "the Isthmus." On the north this same arm of the sea receives the draining from the valley of the Rio Grande, the Mississippi, and the Alabama rivers ; on the south, the surplus waters of the Amazon, the Orinoco, the Magdalena, and Atrato, are emptied into it also. This sheet of salt water may, therefore, be treated of as an expansion of the Mississippi on the north, and of the Amazon on the south.

Regarding this magnificent marine basin as a commercial receptacle, we may search the world in vain for another such feature in physical geography wherewith to compare it. It is unique. And for its commercial capabilities, it must forever remain unsurpassed and unequalled.

It has a semi-continent on the north, and another on the south. When it is seed time on one side of this continental receptacle of agricultural and commercial wealth, it is harvest time on the other. Bebetween the two hemispheres, with their opposite seasons, it will have a round of crops always in market. Six months after the first delivery of the new crop takes place from the north, a fresh crop from the south will be in the act of coming forward. The Mississippi river gives drainage and a commercial outlet to the largest and the most fertile valley in the northern hemisphere. The river-basin of the Amazon (for the Orinoco is connected with it by a natural canal, and therefore belongs to the system,) is the largest and the most fertile in the world.

The Mississippi, taking its rise near the parallel of 50 deg. north latitude. runs south. At every step it changes its latitude: with its latitude its climates are changed; with its climates the productions on its banks are also changed. Consequently the trader, as he descends the Mississippi, beholds at every turn some new article of produce—some fresh variety of merchandise offering for commerce. And by the time he crosses the tropic of Cancer, and bounds out through the commercial mouth of this river upon the blue waters of the Atlantic ocean, he will have crossed the climate and the region for every agricultural staple, and ranged through all the capacities of field and for-

est in the northern hemisphere, from barley, furs, and peltries, down to the list of tropical productions.

The Amazon, on the other hand, runs east, and its navigable tributaries, flowing both from the north and the south, push the intertropical varieties from field and forest far down towards the circle of Capricorn, in the other hemisphere.

The Mississippi has but reached the sugar-producing latitude, where it expands out upon the Gulf of Mexico. The Amazon takes up the list where the Mississippi leaves it, and commencing with sugar, it yields in great profusion, and of fine quality, coffee, cochineal, cocoa, and cotton, hemp, and indigo, India-rubber, wax, gums, drugs, and resins. With cabinet woods and dye-stuffs of great beauty and of infinite variety, this splendid river-basin completes the commercial round by the addition to the above list of many other articles from the field, the forest, and the mine of rare value or great worth. In the commercial circle these two river-basins are the supplements of each other—what one lacks, that the other has to spare.

The foundations of commerce rest upon diversity of climate; for without diversity of climate there can be no diversity of productions, and consequently no variety of produce, which begets barter, and thus gives rise to commerce.

The continent of Europe, extending from the Polar Basin, reaches no further to the south than the parallel of 36 deg. north; consequently none of the climates due any of the parallels between 36 deg. north and the equator are to be found in Europe; and if not the climates, certainly not the productions.

Now, it is a fact in physical geography that is worthy of remark in this connexion: where the continent of Europe ends, at that degree of latitude begin the river basins of India, which, extending from the parallel of 36 de. north far down into the intertropical regions of this hemisphere, have enriched with their produce and their commerce every nation of Europe that has ever ventured abroad with her merchantmen in search of it. And why? Simply because the latitudes and the climates, and consequently the productions of India, were not to be found in Europe; and the Europeans wanting them, sent to India for them. In like manner the people of India wanted the productions of Europe. Hence barter and the foundation of all commerce may be referred to difference of latitude and climate.

But to exchange the produce and the merchandise of the north frigid and north temperate for the north torrid zone, the European had to encounter a tedious and dangerous navigation, and he had withal to compass such a distance that the time taken for his vessel to go and to come once occupied the full year.

On the other hand, we have at our very doors this great valley of the Amazon, with all, and more than all, the climates and soils and agricultural capabilities of India twice told.

The distance, under modern improvements of navigation, from our southern ports to the mouth of the Amazon, is not as many days as India used to be in months from Europe.

The valley of the Mississippi extends, according to the computation of physical geographers, over an area of 982,000 square miles; that of the Amazon and its confluents, with the Orinoco as one of them, em-

braces that vast area more than twice over. The great Amazoinan valley is said by the same authority to cover an area of upwards of two millions of square miles in extent.

The Mississippi river is computed to afford a littoral navigation of 15,000 miles in length; some put it down as high as 20,000. But the Amazon and its majestic tributaries wind through an inland navigation of such an extent that, if stretched out in one line, its length would be enough to encircle the earth three times. It is set down as high as 80,000 miles. The Amazon is said to be navigable for vessels of the largest class up to the foot of the Andes. The Pennsylvania 74 may ascend that high.

And so traversed with navigable streams and water-courses is the great Atlantic slope of South America, that there are in it no less than 1,500 miles of "furos," or natural canals, through which it is practicable for vessels to cross from one river over into another.

Were this valley settled upon and subdued to cultivation, "the Indies," in a commercial sense, would thereby be lifted up and placed at our doors, for all the productions of the East flourish there; and so jealous and afraid of such a result was Portugal, in her day, of East India possessions and commerce, that by a royal ordinance it became unlawful to cultivate in the great Amazon basin a single drug, spice, or plant of East India growth or production.

The republics of Ecuador, Peru, and Bolivia have large and rich provinces upon the head navigable waters of the Amazon, so that the free navigation of that river, or an exchange with Brazil, and the other powers concerned, of the free navigation of the Mississippi for that of the Amazon and its tributaries, would at once, and without more ado, give rise to considerable commerce. As to its prospective value and importance it is useless to speculate.

The navigation of the Amazon would divert from the Pacific coasts of those republics a valuable portion of that trade which now goes around Cape Horn, and reaches this Amazonian water-shed by transportation on the backs of sheep and asses across the summits of the Andes.

A remarkable feature in the profile of the South American coast-line is its want of articulation.

The shore-line of that part of the world is almost as stiff and rigid as the three sides of a right-angled triangle, which it resembles. It is without any considerable indentations; and nowhere among the southern continents do we find those jutting promontories and peninsulas, or those encircling arms and gulfs of the sea, which in the northern hemisphere so increase the length of shore-line, and give that articulation to the continental profiles which enables ships, as in the Mediterranean, the Red Sea, the Gulf of Mexico, about the peninsulas of India, and the northern seas of Europe, to sail up into the interior, and penetrate with commerce the very heart of countries that, but for such indentation of shore-line, would be thousands of miles from the sea and its commerce.

At best, trading vessels by sea can but fringe with commerce the outskirts of South America; for its shore-line, as already mentioned, is without indentation. As yet the heart of that country has never been touched; and unless its magnificent rivers and majestic sheets of

fresh water be opened to navigation, the commercial enterprise of the world never can reach the great interior of South America. Naturally the whole of that continent, except the narrow strip between the summit of the Andes and the Pacific ocean, slopes down to the Atlantic. It is tributary to the Atlantic, and into the Atlantic it is destined to pour its commerce. The country drained by the Amazon and the La Plata embraces an area larger than the continent of Europe. The navigation of those streams would divert a large portion of the Cape Horn trade, and throw it at our feet; for we perceive, from the statements already made, that, on account of the winds and currents of the sea, the mouth of the Amazon is in close physical connexion with our southern ports—and to make that connexion one of business, profit, and friendship, we have but to devise a plan which, by encouraging commerce and navigation there, shall, with the concurrence of the other powers concerned, give an impulse also to the settlement of that valley, and secure to our merchants the right of trade up and down that river on fair and liberal terms.

Bearing in mind, therefore, all these things, and taking into consideration the geographical position of that river basin, and our climates with regard to its outlet—considering its climates, its soils, its resources and its capabilities; that the foundations of its prosperity are to rest on a liberal commercial policy, and that its industrial pursuits must receive a tone, character and direction from those who conduct that commerce—considering that it is the policy of the United States to cultivate the relations of peace with all nations through the bonds of mutual interests and good will—considering, also, that this river-basin is for the most part a wilderness, and that it is therefore, like wax, to receive impression from commerce—considering, too, that the laws of Brazil touching immigration into that valley are said to be of the most liberal character—considering, moreover, the toleration of those laws and the classes of people who are already there;—considering all these things, let it be repeated, your memorialist is deeply impressed with the importance of the subject. He beholds in it a question of immense magnitude. The question of navigation and commerce with the Amazon and up the Amazon—the greatest river and the most fertile river-basin in the world—is the greatest commercial question of the day.

The bearing and the influences of such a question upon the future well-being and prosperity of this country cannot, for their scope and extent, be taken in, unless by the most expanded view of the most far-sighted statesman-ship.

Your memorialist, therefore, prays for such constitutional and rightful legislation on the part of your honorable bodies as shall tend to encourage commerce and navigation with that magnificent water-shed. Among the collateral results incident to a judicious course of legislation now upon such a subject, may be counted, sooner or later, a tide of immigration there, followed by settlement and tillage, which in turn will lead to the development of the boundless commercial resources of that unparalleled region, and to the establishment of those business ties, social relations and happy connexions which active commerce and frequent intercourse never fail to beget between nations.

Imagine an immigrant—a poor laboring man he may be—to arrive

from the interior of Europe, as a settler in the valley of the Amazon. Where he was, his labor could but support himself in the most frugal manner, and he was then no customer of ours. But in his new home, where, with a teeming soil and fine climate responding to his husbandry, and where the labor of one day in seven is said to be enough to crown his board with plenty, he works with his wonted diligence, and out of his abundance he has wherewithal of his own produce—coffee it may be, or drugs, or spices, or gums, or cocoa, or rice, or tobacco, or some other of the great staples of that valley; but be what it may, he has enough to give largely in exchange with us for all the manufactured articles, whether of fancy, necessity, or luxury, that he craves the most. In the long list of what the immigrant there will require of us, may be included that great assortment of goods known as "Yankee notions;" also, pickled beef and pork, hams and flour, butter, lard and the like; for the climate of the Amazon is not favorable to the production and stowage of any of those things. It is particularly unfavorable to the curing of meats and the grinding of flour; it is also unfavorable for all in-door occupations. And in the settling up of the valley of the Amazon, considering that New York and Boston are but eighteen or twenty days under canvass from the mouth of that river—considering that the winds are fair for going and free for coming, and that the Atlantic ports of the United States are the only market places for which the winds are thus propitious—considering all the physical advantages which we thus enjoy, and regarding this immigrant as the type of a class—it may be expected, whenever the tide of immigration, guided and sustained by American enterprise and energy shall begin to set into that valley, that New York and Boston, with the manufacturing States, will have to supply those people with every article of the loom or the shop, from the axe and the hoe up to gala dresses and river steamers.

The man, therefore, who in his native Europe could not buy a cent's worth of American produce, simply by being transferred as a settler in the valley of the Amazon becomes at once a producer, and one of the best customers to the American merchants, that it is possible for a commercial people to have; and Europe is ready, as soon as American commerce, backed by American energy, shall give the world tangible evidence of the riches and resources of that country, to pour forth its hordes into it.

Not only so would its settlement enrich us, but in other respects also it would add to our national greatness and prosperity; for it may be set down as an axiom in political economy, as true as is the Catholic proposition of geometry, that in order that communities of men may forsake the land, take to the sea, use it and become seamen, it must be easier to earn a living at sea than on the land belonging to such communities.

Hence we find the severe climates and barren soils of the North sending forth their young men in crowds down to the sea for a living; but never will men, and never have men been known to forsake cheap lands, rich soils and fine climates for the sea life.

The valley of the Kennebeck and the Merrimack, and the shores of Cape Cod, may send forth of their yeomanry to make sailors of; but we have never yet heard of young men, in any considerable num-

bers, forsaking their homes in the teeming valley of the Mississippi, for the dangers, the hardships and the scanty fare of the common sailor at sea.

And neither will the immigrant or his son forsake the mild climate and kind soil of the Amazon for the sea. American merchants, American ships and American sailors will therefore be the chief competitors for the fetching and the carrying of all that trade to which, in process of time, two or three hundred millions of people in the valley of the Amazon, and which it is capable of sustaining, will give rise.

The commercial future of that valley is the most magnificent in the world.

It belongs mostly to Brazil, and our trade with Brazil is already greater than it is with any other country whatever, excepting only England and France.

From the United States to Rio, the voyage is long and uncertain, and our merchants are falling into the habit of conducting their Brazilian correspondence through England. There is a monthly line of steamers thence to Rio; its time of going is 29 or 30 days; the average sailing passage from New York to Rio is from 40 to 50 days. Hence it is more convenient for the business man to send his letters via England.

Now, there is a line of steamers from Para, at the mouth of the Amazon to Rio. A line from Norfolk to Para, equalling in speed the Collins line to Liverpool, would make the passage in eight or ten days. At the same rate the distance thence to Rio might be accomplished in another week or ten days, thus bringing that great commercial mart of South America within twenty instead of forty days of our business men.

All the lines of ocean mail steamers that have yet been directly encouraged by the United States government on the waters of the Atlantic have their terminus in New York.

No direct encouragement to steamship enterprise has been given by the government to any port south of New York.

Your memorialist is opposed to centralization, and therefore for this, as well as for other reasons, prays that Norfolk or Charleston, or some other southern Atlantic port, may be made the terminus of a line of United States mail steamships to Para, touching at Porto Rico and such other West India islands as may be agreed upon.

Another reason why the preference in this enterprise should be given to a southern port, is in the distance, for the southern ports are nearer than those of the North to the mouth of the Amazon. And to ask that these steamers should pass by southern ports with South American correspondence, to be landed at the north and sent back through the mails to the South, would seem both unfair and unreasonable to your memorialist.

Moreover, he has ventured to specify only one of a series of measures which it may be necessary to adopt, in order to develop, for the benefit of American navigation, the great commercial wealth of the Amazon. He contents himself with specifying this one, because, in his judgment, it is highly expedient and of pressing importance.

And, as in duty bound, your memorialist will ever pray, &c.

M. F. MAURY.

Railroad from St. Louis to New Orleans.

It is not astonishing that public attention should be strongly directed to this project. The intimate social and commercial relationship already existing between St. Louis and New Orleans, must irresistibly impel these two cities to adopt the improvements of the age for the maintenance of their future intercourse. The necessity of linking them together by a direct Railroad, is no longer a debatable question. It must be done; and that speedily, for notwithstanding all the advantages of one of the finest rivers in the world for navigation, the spirit of the age, and the business of the two cities, require it. Those who are to be or may be affected by it, should at once make it a subject for serious consideration. Those who can throw any light upon it, either as to its cost of construction, business when completed, or the route it should take, should at once contribute their information for the public good. The time has past for spending years in speculations upon such projects, however grand they once might have appeared. We therefore present, through the columns of the Western Journal, what we can to the general stock, and though hastily made up, we trust it may be of some benefit, and at least induce others to follow the example set by the Editors, and their correspondent, Professor Forshey.

Our province will be, to give generally such information as we possess of the country through which the Road may pass in Missouri and Arkansas; assuming it to cross the Mississippi at Helena, in Arkansas, as at first proposed. In the interesting article published in the last number of the Journal by Prof. Forshey, he proposes to carry the road on the western side of the river, throughout the whole distance, until it reaches Algiers, opposite New Orleans. We have no feelings or interests in opposition to this plan, and earnestly hope it will be carefully investigated, before deciding upon any other. We have great respect for the opinions of the Professor on the subject, and have read his article with much satisfaction, yet we must say that our impressions still are, as they were before reading it, in favor of the route by Helena.

We take it for granted, that so great a scheme of internal improvement as this, which owes its origin and hopes of success mainly to the interests concentrated at its extremities, should be as nearly as possible a straight line between these points. That it should deflect from this line only when obstacles of a serious or too costly a nature to overcome, present themselves, or where important local interests beneficial to the Company and the country may be subserved without any grave disadvantage. Time is now an important element in all calculations relating to travel and transportation; no route can rest secure, therefore, as to its business, that does not give this element its due weight in determining the lo-

cation. As distance and time are almost synonymous in railroad travelling, the first can rarely be materially increased without a corresponding consumption of the latter. Distance must therefore be abridged whenever it is possible in such improvements, as look to public favor for support, and hence *air lines*, though rarely practicable, are the grand desiderata—the perfection of the system.

The Longitude of New Orleans is 89° 59′ west, that of St. Louis 90° 15′ west (of Greenwich), the latter is therefore almost directly north of the former. The Latitude of New Orleans is 29° 57′, that of St. Louis 38° 37′. Hence, the distance by an *air line* between these cities is about 605 miles. Such a line would cross the Mississippi river three times—twice within the first fifty miles below St. Louis, and the last time near the Southwestern extremity of the State of Tennessee. The river must necessarily be crossed once, but the two other crossings deserve consideration, before being adopted. There are strong reasons for making them, independent of adhering to the air line proposition. As the first crossing would be at or near St. Louis, the second near Ste. Genevieve, most of the line between the two would be along a level plain formed by the American bottom; the cost of the construction of this distance would therefore probably be less than through Missouri. But, there are serious objections to this route: first, in the "solution of continuity", in the line and consequent interruption in the travel, produced by having to make these crossings by ferries; second, in the time lost by these ferries, which would in probability be greater, than the gain by shortening of the road; 3d, in the obstructions which would be constantly occurring during winter from running ice; 4th, in the liability of the Bottom to overflow, and endanger the road and buildings; and finally, the necessity there would be for obtaining the consent of the State of Illinois, which, with the rivalry of her own great work, the Central Railroad, is by no means sure of being given. Other reasons could be suggested, but these appear to be sufficient for abandoning the nearer approach to an air line that might be had through Illinois, by making the two first crossings of the river, for a somewhat longer, even if more costly route, entirely through Missouri.

It may therefore be assumed, that the line will be entirely on the western side of the Mississippi river, at least through this State, whether the crossing that must be made, be at Memphis, Helena, or at New Orleans; and that the route to be adopted through Missouri, will not be altered or affected by the selection of either of them.

It is a singular fact that there are two great leading ideas in the public mind on the physical character or topography of what is called the *Mississippi valley*, directly opposed to or inconsistent with each other. When we speak of the Mississippi valley as a whole, we imagine a vast plain extending from the head waters of

that river and its tributaries, to the Gulf of Mexico, and bounded by the Alleghanies on the East, and the Rocky mountains on the West. On the contrary, when we investigate the subject in detail for some particular purpose, as for instance, the one we now have under consideration, of connecting St. Louis and New Orleans by a railroad, the plain disappears, and a mountain chain rises up in our imagination across the path exciting fearful apprehensions for the practicability of the project.

As might be expected, where such contradictory opinions are generally diffused and adopted, they have both some semblance of truth, but neither of them are strictly true. That great region of the earth, drained by the Mississippi river and its tributaries, is a *valley* or plain in its lower part, and a *basin* in its upper or more Northern portion. The high lands constituting the Southern edge of this basin, are what geographers, apparently for the purpose of ornamenting their maps, have chosen to lay down in Missouri as a mountain chain, and dignify with the title of *Ozark mountains.* But in truth, there is no such chain of mountains in the State; what has been called so, is but a continuation of the plateau spread out in the Southwestern part of the State, between the Osage and White river, and which, as it approaches the Mississippi, is cut up chiefly by aqueous agencies into hills and short ridges. This system of high lands crosses Southern Illinois, Western Kentucky and Tennessee, and finally mingles with the Alleghany mountains in the latter State and Alabama. This, as we have said, is the Southern edge of the *basin*, and through it both the Mississippi and Ohio rivers, break their way to reach the *plain* or *valley*; in which they soon mingle their waters, and through which thus united, they wind their tortuous way to the Gulf of Mexico.

This term "mountain" which has been applied almost exclusively to that portion, that lies in the State of Missouri, is an exaggeration of language. It may serve a useful purpose as a local term to designate particularly some hills or ridges, that rise conspicuously above the level of the adjacent country, but as a systematic term it should be abandoned. The region thus designated on the maps, nowhere rises more than about 1500 feet above the level of the ocean, and not often, in the Eastern part of Missouri, to more than 1100 or 1200 feet. It is consequently about the same level as the country in the vicinity of the head waters of the Mississippi, St. Peter and Red river of the North, which constitutes a portion of the Northern edge of the *basin.*

The proposed line of railroad from St. Louis to New Orleans, will not be obliged to pass over the summit or normal level of this plateau, for by taking advantage of the smaller streams that have cut their beds into and through it, the passage may be made at a lower elevation considerably. On examining a map of the State of Missouri, it will be seen that many of the streams run for a con-

siderable distance parallel to the Mississippi or nearly so, and hence, instead of having to cross their valleys, these taking generally the direction of the proposed line, facilitate rather than obstruct it.

It has been recently determined by Mr. Gest, engineer of the Ohio and Mississippi railroad, that the level of low water in the Mississippi, at St. Louis, is 418½ feet above the tide.* Doctor Wislizenus gives the level of the city "directrix" as determined by his Barometrical observations, 420 feet above the Gulf.† Assuming these results as correct, we may fix the starting point or depot of the proposed line at about 450 feet above the level of the Gulf. From this point, the road for reasons already given, should take the most direct course that can be had west of the Mississippi river, to the other extremity of the line.‡ Sufficient explorations have been made in former years by Maj. Morell, then Chief engineer of the State of Missouri, whilst locating the line of a railroad from St. Louis to the Iron Mountain, and more recently by the Pacific railroad company, and by Maj. Barney for the United States, to show that such a line must either ascend the valley of the Merrimac a considerable distance, almost at a right angle to the air line proposed, and then turn south, or descend along the edge of the Mississippi, for the first thirty or forty miles. The country in the interior immediately south of St. Louis, until the valley of the Merrimac has been passed, is so broken or cut up by ravines and small streams, that a railroad across it could only be constructed at an enormous expense. The line along the edge of the Mississippi river is the one, it is understood, that Maj. Barney

* See Senate document 20, 32d Congress, 1. Session, "Report of Sec. of War, communicating reports in reference to the inundations of the Mississippi river.

† See Senate Document 26, 30th Congress, 1st Sess. "Memoir of a tour to Northern Mexico, by Dr. Wislizenus."

‡ It has been recently proposed to construct a branch of the Pacific Railroad in the direction of this line through Potosi to the Iron Mountain and Pilot Knob, near the head of the St. Francis river. Some suppose that this branch ought to or will constitute a portion of the line between this city and New Orleans. This is a mistake. The point at which this branch will leave the main trunk of the Pacific railroad, will in all probability, be not less than thirty, and may be, as much as fifty miles from this city; and as that point will be about the same distance by an *air line* as from N. Orleans to St. Louis, the whole distance between that point and this city will be a dead loss. This is a sacrifice that would not be tolerated long by the public. Even if this junction were made with a line or company from New Orleans, another would be soon formed to take the direct line between the junction and St. Louis. And as the country through which the latter would pass, is better adapted than the former for a railroad, and the distance less by about one-third, there can be no doubt as to the effect it would have upon the travel and profits of such a branch. In fact, it would seem to be the most judicious course for the Pacific railroad company, to disclaim any intention of making such a branch, for surely it cannot desire to make it, when if it did so, and then could prevent any other from being made, it would secure its monopoly by a sacrifice of the interests of the city. And if it could not prevent competition, the result would be disastrous to its own interests as far as they were involved in the Branch road.

adopted in his survey of a line to Little Rock, in Arkansas, and is the one which most nearly fills the requirements of a line between St. Louis and New Orleans. It approximates more nearly than any other can west of the Mississippi to the air line, and although it must often pass between the water of the river and high rocky bluffs, there are few of such passes, where the *talus* formed at the foot of the Bluff is not wide enough for a double track. As the average fall of the river, throughout its entire length, is known to be about three and a half inches to the mile, and as the plane of this road, whilst it continues along the river, will generally be parallel to that of the water, we shall have for the first thirty or forty miles an almost perfectly level road.

Six miles from St. Louis, this line will pass through the village of Carondelet, whose excellent harbor and vicinity to extensive coal mines have already given it considerable advance in the last few years in population and business, and must, at no very remote period, make it a very important place especially for manufacturing purposes. Four miles below this, or ten below St. Louis, the line will pass along the grounds in front of Jefferson Barracks, and about eight miles further, or eighteen from St. Louis, enter the valley of the Merimac.

Just below Carondelet, the line crosses a small stream called the Des Peres, which can be bridged with facility. The Merimac river is therefore the first obstruction of this kind of any considerable importance. This stream is about two hundred yards wide, with bottom land between its bed and the bluffs. The latter being of limestone, afford a valuable building material, advantage of which may be taken in making abutments and other structures needed in bridging the stream. Having crossed the Merimac, the line still continues along the Mississippi river banks. Maj. Barney's line, it is understood, continued along it down to the mouth of Platten Creek, which is about thirty miles below St. Louis, up the valley of which it takes, and leavingthe Mississippi. We have an impression, the result, however, of only travelling frequently through this region, that an easier route could be had by leaving the Mississippi higher up,at the mouth of Little Rock Creek or Glaze creek,some three or four miles below the Merimac, and following the valley formed by the interlocking of these small streams, into the valley of the Joachim or Swashin creek, and up this to a suitable point for ascending the ridge that divides this creek from the Platten ,up which Maj. Barney's line runs. By this change in the line it will be brought nearer to theMammoth, Sandy, and other valuable lead mines that lie only a few miles to the west, and will pass directly by one of the Sulphur Springs, that would soon become a place of great resort during the summer season. Having ascended the ridge dividing the Swashin (Joachim) and Platten, this being a spur, this would lead with facility to the main ridge, which divides the waters of the Mississippi from those of Big River.

Big river is a tributary of the Merimec. It rises amongst the hills and ridges of St. Francis and Washington counties, runs about 60 or 70 miles in a northerly course, nearly parallel with, but in an opposite course to the Mississippi. The ridge which divides the waters of Big River from the Mississippi is one of the most regular and continuous in South Missouri. Its general course is a little West of North and East of South, and consequently the line of the road would approach it very obliquely. It nowhere within a reasonable distance for crossing sinks to a level of less than 800 or 1000 feet above the sea, nor rises to more than about 1200 feet above the same level. It undoubtedly presents the most serious difficulty that will be met with throughout the entire line in Missouri; and yet it is chiefly a ridge of denudation—that is a ridge made by the excavation of the valleys occupied by the Mississippi and Big rivers and their tributaries. It is crossed with facility in many places by good common roads, and there can be no doubt that by careful exploration an equally good way across it can be got for the Rail Road. Its culminating point on such a line would not probably be more than 350 or 400 feet above the level of the starting point in St. Louis. Major Barney's line up the Platten crosses this ridge but a short distance from where the line we have suggested would probably cross. We think, however, that a lower depression can be found for the latter than the one he was obliged to pass through. In the vicinity are Vallé's, Perry's and a number of other valuable lead mines in active operation, and the whole country gives evidence of abounding in this metal. A few miles West are Bellefontaine, Sheboleth and other mines of this metal, whose produce would all become tributary to the Road.

The descent from the ridge is not difficult towards the South, and the Engineer will have before him the choice of two routes equally good, and apparently about equally advantageous to the interest of the road and the maintenance of the directest route. One, which may be called the western, may descend into the valley of Big River, which it will follow generally but not rigidly to the mouth of Flat river, up that to its source, which is a low plateau amongst the Porphyritic and Granitic hills of this region, and across this plateau or valley to the head waters of the St. Francis River, and thence by the Iron Mountain and Pilot Knob, Arcadia &c., nearly in a straight line till it strikes the St. Francis again in Madison county. There are very few streams of any importance to be crossed by this line, Big River being the largest, which is not more than 20 or 30 yards wide, and all capable of being bridged with facility. This line, besides passing directly by the well known iron deposits of the Iron Mountain and Pilot Knob, will be very near Mine a Joe, McKee's and other extensive Lead mines on or near Big River, and will be only about 15 miles East of those in the vicinity of Potosi and the Old Mines.

The other route which may be called the Eastern one, passes through the valley and village of Farmington, the county seat of St. Francis county. This valley is one of the most beautiful and fertile in South-eastern Missouri, and would doubtless contribute largely to the way business of the road. From Farmington the road would take down the St. Francis to the point of junction with the western one that we have just described, or it might probably with advantage be made to pass through Mine La Motte—one of the most valuable Lead, Cobalt, Copper and Nickel Mines in the country—and Fredericktown, the county seat of Madison county, and thence down the St. Francis, as before.

Either of these lines, we believe, may be followed with facility. They do not diverge from each other more than ten or twelve miles, and either may be adopted without materially increasing the aggregate distance of the whole line. From the junction of these branches, the road would pass down the valley of St. Francis River through Greenville, the county seat of Wayne county, and thence on to the edge of what is called the *swamp region* of South Missouri. So far this route is very nearly the same as that which it is believed Major Barney adopted and surveyed for the line of a Rail Road from St. Louis to Little Rock in Arkansas, but here these lines separate, at least, if that to N. Orleans be made to cross the Mississippi at Helena or Memphis.

Mr. Nicollet's† Barometrical observations show that the culminating point between the waters of the St. Francis and Big Rivers reach an elevation of only about eleven hundred feet above the waters of the Gulf of Mexico, and consequently only about 650 above the starting point in St. Louis, being but little more than the ridge between the Mississippi and Big River, of which we have just spoken. The approach, however, to the summit by either of the lines we have been considering, is so gradual and regular that we pass it without being sensible from common observation of its existence.

We thus see that the difficulty of a road through "the Ozark Mountains" of Southern Missouri, which loom up so formidably to the imagination, disappear almost entirely by actual investigation, and that the road through this region of the State is unquestionably far less difficult than routes generally in the Eastern States; and when truly explored, we think it extremely probable that the line through this part of the State of Missouri will be found not more difficult or costly, than the line of the Central Rail Road through Southern Illinois.

†See "Report and Map of the Hydrographic Basin of the Upper Mississipp River by J. N. Nicollet," printed by order of the United States Senate. It is much to be regretted that Major Barney's survey has never yet been published, as it would doubtless give us a great deal of valuable and exact information on the line through Missouri.

This line along the St. Francis runs through one of the richest mineral regions of the State, that is now entirely neglected south of Mine La Motte and the Pilot Knob. It abounds in Iron Ore and indications of Copper, Lead, Cobalt, &c. West of it are the Copper Mines of Current River, and still nearer the Kaolin and Clay deposits about the head waters of Big Black, at which two or three establishments have already been erected for the manufacture of the various kinds of ware.

Fortunately nature has provided a way through the "swamp region" of Missouri and Arkansas that needs but little improvement by the hands of man. From the point at which the valley of the St. Francis reaches the swamps or low lands, to Helena—a distance of about 180 miles—there is a ridge of elevated ground rising entirely above the swamps and dividing them into two portions, one on the East and the other on the West. This ridge runs in an almost directly straigth line north and south, having only a slight curvation towards the West near its middle portion and broken through only in two places by streams throughout its entire length. These streams are the St. Francis and L'aguille.

We have never had an opportunity of exploring this ridge, but from the information obtained from those who have, and from the plats and field notes of the United States Deputy Surveyors which we have carefully consulted, we have no hesitation in saying that it presents one of the most remarkably advantageous routes for a Rail Road that for an equal length to be found in the United States. No person can form a correct opinion of this part of the route by consulting the maps of it that are at present published. In Missouri the best constructed and most recently published map gives only a fancy sketch of the region; and those of Arkansas, that have come under my observation, are little better. In Missouri this portion of elevated land projects into the swamp region in the form of an irregular triangle, whose apex terminates at the St. Francis river just opposite the Chalk Bluffs or northern extremity of the same high lands in Arkansas. In fact these constitute the same system of high lands, only broken through here by the St. Francis. The Missouri portion cannot be properly called a ridge, but would be more properly styled a promontory of the main high lands of Missouri, projected into the valley or low lands of the Mississippi. On the north-eastern edge it rises into Bluffs from a hundred to a hundred and fifty feet in height above the plains and swamps lying between it and the Mississippi river. From these Bluffs it falls off by a gently inclined plane to the West until it reaches the level of the low lands and swamps of St. Francis and Black rivers. It is along this western edge of the inclined plane that the Road would undoubtedly take its course to the Chalk Bluffs, where it would enter the State of Arkansas.

From the Chalk Bluffs to Helena the high lands along which we

propose the line to run, form a remarkable piece of elevated ground, known as Crowley's Ridge, rising from 30 to 60 feet above the low lands and swamps on either side, about one hundred and thirty-five miles long, from one to ten miles wide, of an almost uniform level and broken through but by a single stream—the L'aguille near its southern extremity.

We are well satisfied that it is the ignorance or erroneous opinions that have always prevailed of the true topography of this part of southern Missouri and eastern Arkansas, that have prevented public attention from being turned before this, to a Rail Road by this route from New Orleans and the Gulf of Mexico to St. Louis and the Upper Mississippi Basin. By the errors which have been copied by one map maker after another, we are made to believe that a range of mountains almost or quite as formidable as the Alleghany or Rocky Mountains have to be overcome; and scarcely has this been done, than we are precipitated into an impenetrable plain covered with lakes, swamps and ponds. That publisher who will put himself to the trouble to compile the materials now collected in the offices of the Surveyors General of Missouri and Arkansas and present them as they are, will serve the cause of truth and science and receive the thanks and remuneration of the public.

The reader will at once see, why we think Helena is the point at which this Rail Road Route will cross the Mississippi river. It is the southern terminating point of this long ridge, or strip of high land, and offers, if we are correctly informed, an excellent terminus for the line on the west side, and can be connected with great facility on the eastern side with lines of roads already projected through the States of Mississippi and Louisiana. It traverses the entire swamp region at an elevation entirely above all danger of obstruction from high waters, and follows throughout almost exactly the desiderated air line. We have no objections to crossing the river at Memphis instead of Helena, and can readily appreciate the many advantages of forming a connection with that city, which is soon to be the terminus of so many other important roads; and if the route can be made to take that part for crossing, without deflecting too far from the direct line and without danger from the overflows of Mississippi or too much expense in the construction of the line across the bottom lands, it should have the preference. But these are questions that can only be determined by an actual survey. The friends of the main object of this road, that is the connection of New Orleans and St. Louis, can have no prejudices for or against any particular intermediate point, and would certainly feel well satisfied to connect directly with one so important as Memphis, if it can be done without too serious sacrifices.

If the line east of the Mississippi can be made to take or to connect with any road already constructed or projected, that takes as direct a line as that which we have indicated through Missouri and

Arkansas, it seems reasonable to assume that the whole distance can be accomplished in 650 miles—thus allowing 45 miles for sinuosities and deflections from the air line. This is 125 miles shorter than the line projected by our friend Professor Forshey, and considering the other advantages of the route, must leave no room for doubt between them.

Considering the slight grades and general directness of this line, we may reasonably calculate that the whole distance between New Orleans and St. Louis will be traversed by this route in less than 24 hours. What a change this will produce in the intercourse of St. Louis and New Orleans!—Who can measure its importance or foresee its results?

MAYOR'S MESSAGE.

ST. LOUIS—ITS CIVIL AND FINANCIAL CONDITION.

Gentlemen of the City Council:

I submit for your consideration the reports of the several city officers, and, as required by charter, offer a few remarks touching the city's general condition, and such matters of special interest as seem to be demanded of me. At your first meeting, I took occasion to congratulate you upon the healthy and general prosperous condition of the city. Nothing has since occurred to change the favorable views then expressed.

The price of our securities is fully maintained, and they are more sought after at present than at any previous period, notwithstanding the heavy issues required for our railroad and other improvements. Every liability, either for accruing interest or maturing bonds, has been, and will continue to be, punctually met.

Last year's revenue—$559,452 15—exceeded that of the previous year $126,416 16, and the receipts for 1852, from the enhanced price of property and continued rapid growth of the city, must necessarily be still greater, if the same rate of taxation is fixed. I repeat the opinion, so often heretofore expressed, that *there can be no safer public securities than those of our flourishing city*, nor any which should bear a higher price; and no other sufficient reason can be given for their not reaching at least par value, than the reckless efforts made by certain of our citizens to throw suspicion upon them.

The entire bonded debt at this day is $1,850,096—an increase of $115,000 (less a$1,000 bond paid in April) over the amount published on the 12th of March, namely: for sewers on Poplar, Seventh and Thirteenth streets, $50,000; improvement of the wharf, $20,000; Harbor, $20,000; and for instalment of five per cent. on Pacific railroad stock, $25,000.

The property owned absolutely by the corporation is valued by the Assessor, as by published statement, at *two millions eight hundred and ninety-nine thousand three hundred and forty dollars*, more than a mil-

lion above her entire indebtedness; and the property of citizens within the city limits subject to taxation and given in last year to the Assessor, exceeded forty-one and a half millions of dollars.

With such a statement before us, and the knowledge of the fact that she has never repudiated a debt or failed to meet it—principal and interest—when due (unless *temporarily* debarred by charter restriction from making the necessary appropriations,) can any one doubt the ability of a city of a hundred thousand inhabitants, increasing in wealth and population faster perhaps than any other on the face of the globe, to pay her indebtness, and maintain her credit and her good name? Were the debt five times as great, such a suspicion would be a slander upon our industrious and enterprising citizens, disproved by all the evidences of present prosperity and a glorious future with which we are surrounded.

The money spent in judicious and proper improvements is not lost but will be returned to us a hundred fold, in the increased comforts of our population, besides the actual enhancement in the price of property and the extended facilities for manufactures and commerce—the principal elements upon which we are to rely for support and nourrishment of the giant young city whose interests for a twelve-month are entrusted to you, and whose future depends in some measure upon the manner in which you discharge your duties.

The construction of the Biddle street and the several district, sewers which have been completed, must have a favorable effect upon the general health of the city, which at this time is unusually good, and by a rigid observance of our sanitary regulations, we may reasonably hope hereafter to escape epidemics, or any but the usual sickness incident to our climate. Public opinion is so well ascertained on the subject and the benefits of a sewering system are so manifest that I need not urge its encouragement upon you. The Board of Health are also endeavoring by other means to get rid of surface water in ponds and other places—the presence of which during the hot season is productive of disease, and their efforts in this respect I hope will be supported by you and prove successful.

Our Hospital accommodations, I believe, are sufficient for our present necessities, and are under proper regulation, with the exception that there is no law to make persons liable to a fine who bring us sick paupers from a distance, on steamboats and otherwise, to be taken care of by the city. This can, to some extent, at least, be remedied by a proper ordinance.

The Police force of the city is well organized and active; it is certainly as efficient as can reasonably be expected, considering their small number and the great extent of the city. This is evidenced by the large number of vagrants and other evil-doers in the Work House, and the daily business in the Recorder's Court. By the late ordinance, adding one Lieutenant and ten privates, the whole force is now increased to sixty-three, to wit: One Captain, six Lieutenants and forty men on the night guard, and one Captain and fifteen men on the day guard; at an additional expense of about five thousand dollars, and making the entire pay-roll thirty thousand dollars per annum. This is a small sum compared with the expense of the PoliceDepartment in other cities, but it is as much as can be applied to that objec

under our present charter, without overlooking other equally important interests.

I have alluded to the larger number of persons constantly in the Work House; the expense of maintaining them is great, and though I have every reason to believe the establishment is as well managed as possible under existing circumstances, it is probable the city is not compensated by their labor in grading streets, &c., for the outlay for their support. As the present buildings will soon have to be enlarged, I would suggest that a more suitable location be obtained and proper buildings be erected, in order that the labor of the inmates may be so applied as to pay expenses. The old County Farm (the present small pox hospital) has been suggested for the purpose, or the Common lot No. 86, on the river bank.

In connection with this subject, I beg to call your attention to the necessity of a Juvenile Reform School, which I have urged upon previous Councils. Youthful offenders are almost daily detected in petty thefts, &c., but are discharged by the Recorder to continue their evil practices, from a just conviction on his part that committing them to the Work House would not mend their morals. A proper charter has been obtained for the purpose, and the necessary assistance from the city will enable the managers at once to commence operations.

The Fire Department under its present organization, continues to give entire satisfaction. False alarms are of rare occurrence, and of serious fires we have but few, which are generally subdued speedily by the exertions of the active citizens who devote themselves to this arduous service. Two of the companies—the Liberty and Union—have as yet failed to comply with the ordinance, and receive their quarterly stipend; but, nevertheless, continue to perform their duty at fires as heretofore, trusting to the contributions of citizens for their support, and the satisfaction of doing good for their reward. To the report of the Inspector I refer you for details as to the condition of the several companies, and the amount necessary to be appropriated this year for the support of the department.

The sale of the lot and engine house of the Missouri Fire Company, on Third street, to the United States Government, is about to be consummated, and the purchase money will be applied without delay, as provided by ordinance, to procuring them another house in a more suitable location.

As closely connected with the efficiency of this department, I will next notice the Water Works. The new pump and engine are nearly ready, and when put up, will insure us a fair supply of water for a few years to come; but to make this fully available, means must be provided over and above what will be applicable from the revenue appropriated by charter to put down all the pipe now ordered, and perhaps to make other extensions. The pipe now lying on Fourteenth street should, without further delay, be brought into service, to connect with the pipe to be laid on Chouteau avenue, for the better supply of the First Ward; and if the bridge over the pond cannot be built by the Workhouse hands, and out of the New Limit money of the Second Ward, it will have to be done out of appropriations for Water Works. This work cannot, with propriety, be further delay-

ed, as a very large portion of the city is inadequately supplied with water for the want of it.

I must, however, again call the attention of the Council prospectively to more efficient means for an ample supply of water to the whole city. The present location of the pumping engines is bad, and the means, they will afford for furnishing water, even when the new pump is put up, will be wholly insufficient to keep pace with the growth of the city for more than three or four years to come, during which period measures should be taken for permanent works on a large scale. For these a point higher up, and in a direct line with some street to the present reservoir should be selected, or otherwise the Hamburgh plan of a tower and capacious basins on the river bank ought to be adopted. In a matter of so much moment, I am opposed entirely to a temporizing policy, and hope the Council will take it in hand at an early period.

Proceedings have been commenced in the Circuit Court to condemn and open the wharf from Plum street to the southern limit of the city, on the liberal plan established by ordinance—the greater number of the property holders having voluntarily surrendered their claims to the city. Every effort will be made to procure similar concessions from the majority of those claiming north of Cherry street, and a plan will be submitted to you for widening the wharf westwardly between Biddle and Florida streets, and changing its location and straightening the line of it from Labeaume street to the northern limits.

It is vitally important to the interests of the people of the upper part of the city that this should be done, and I trust the Council will take the necessary measures to open and improve the wharf there as they have done in the south, not permitting the opposition of a few property holders, *on the river*, to deprive a large part of the city of the benefit of a landing and thereby retard its growth and improvement. Between Cherry and Plum streets the work on the wharf is progressing rapidly, and the beauty and utility of the improvement made by the widening of the flat plan fairly demonstrated. Few cities can boast of such a landing as ours, between the streets above named. What then will it be, when we have one of the same kind from the Arsenal wall to the Rocky Branch? Let us not be deterred by opposition or expense from making the necessary start to secure it. All of it will be necessary for our commerce before the city has half the population it is destined to contain.

The works in the harbor, for its preservation, have been interrupted by the rise of the river, and cannot be resumed until the fall season. Notwithstanding the serious injury to them by the flood of last year, and the early rise this spring, I am happy to say that the harbor was never in better condition than now, and we have the assurance from what has been done that we can perpetuate this state of things, though at considerable expense, which in justice, however, ought to be, and we hope yet will be, met by the General Government.

The section of the Pacific Railroad under contract—near forty miles—is, in some parts now ready for the rails. The whole is expected to be finished and in operation by the beginning of next year. The Directors will doubtless proceed without delay to locate new sections, so as to reach as speedily as possible the rich agricultural

and mineral regions of the interior of our State. A branch is in contemplation from the main stem to the Iron Mountain and Pilot Knob, passing through the pineries and lead mines of Washington county. Should this be determined upon, I recommend, without hesitation, that the necessary authority be obtained from the Legislature, and if approved by our citizens, that liberal subscription be made by the city to insure its early construction. No Railroad that can be made to St. Louis will prove of more advantage than the one that will bring to our doors the iron and other minerals of Washington and the adjoining counties,

On the Ohio and Mississippi Railroad, though a commencement was made in February last, the work has not been pressed, as new surveys were ordered with a view to more favorable locations. These are nearly completed, and a final location will be made and a large force put on the work between Illinoistown and Salem in a few weeks. At least the contractors assure Directors both of their willingness and ability to push it forward with spirit. There is good reason why they should do so, as they are large stockholders, and there can scarcely be a doubt but that it will prove one of the best paying roads in the Union, when completed through to Cincinnati, which it can be in three or four years.

Last year, I deemed it my duty to urge upon the Council the necessity of purchasing a suitable site and the erection of a Town Hall worthy of the city. Permit me again earnestly to recommend this measure to you. The necessity of it is too apparent to require argument, and no advantage can be gained by delay. We are authorized by charter to do so, as also to purchase parks and squares (*lungs*) for the city, of which I am and always have been, in favor, as also of improving the few now belonging to us.

Perhaps the want of a large park in the city (which can now only be obtained at great expense,) can best be supplied by a wide avenue or drive properly located just beyond the western limit. Suppose we open Jefferson avenue to three hundred feet, and extend it northwardly the same width, partly by the line of Pratte avenue to St. Louis Place, above the Reservoir. This can now be done at a comparatively trifling expense, and would afford a breathing place of vast extent, which will ere long be on the border, if not actually within the limits of the city itself. I hope an effort will be made to effect this, or, if more desirable, a similar improvement, on Second Carondelet avenue, or both; and in the meantime, would urge to purchase the ground of other public squares—if they can possibly be obtained—in the very heart of our present population.

Nothing can be more necessary for the health and comfort, or add more to the beauty of the city. In every large town of the old world, and in the eastern portion of our own country, they are considered as indispensable as light and water, and yet St. Louis, when land was once so cheap, has failed to possess herself of a park worthy of the name, or indeed of half a dozen open squares. Let us remedy the oversight to the extent of our ability.

Several of the suits in which the city was a party, have recently been decided in the Supreme Court. In one of these, Isaac Walker's, the question was settled as regards the right of parties in the New

Limits, to recover back taxes, and I am happy to say in favor of the city. This decision will put an end to a great amount of expensive litigation with which the city was threatened on this account, and is therefore important in its results. The agreed case of Hoffman, as to the power of the city to grade and change the grade of streets without being liable for damages, has also been decided in our favor. In the case of the St. Louis Hospital, for the support of insane paupers, the judgment of the lower Court was affirmed, and provision must be made for its payment.

I would also call the attention of the Council to the claims of parties against the city for work done on the Centre market stores. Owing to the late period of the season at which they were finished, they are not yet under rent, and it is not practicable to make a temporary loan on the pledge of the rents, as required by ordinance, to retire the balances due. I would recommend that some other means be adopted for the payment of these parties, who have waited patiently the action of the Council, and that their claims be liquidated without further delay.

The city ordinances were generally revised by a committee, and acted upon by the last Council, but no *digest* was prepared for publication. This should be attended to at an early day, as it is difficult for city officers and others to ascertain, without some considerable labor, in many instances, precisely what the law is.

The revision and amendment of the city charter, also, is a subject I would suggest for your consideration. That it is far from perfect, will readily be admitted; and when you come to make the regular annual appropriations, you will find that it is impossible to observe the arbitrary disposition of the revenue it requires, and at the same time provide adequately for the necessities of the various departments of the public service.

Whether it is better for the Council to prepare a charter for the action of the Legislature, or to refer the matter, as has been done in other cities, to a convention of delegates, to be chosen for the purpose by the people themselves, you will decide. I should think the latter preferable. This is a matter of the first importance, and worthy your serious attention.

That I may not, however, be misunderstood, I beg leave distinctly to state, that I do not wish to see the compromise contained in the present charter, as to improvements in the Old and New Limits, disturbed, but carried out in good faith, either in the manner now fixed, or some other that may be equally acceptable to the New Limits.

But there are other difficulties and omissions which should be remedied, that I will not, however, further trespass upon your time to point out at present.

I second the suggestion of the Comptroller in regard to the City Common. A special officer should be appointed to guard the interests of the city in all matters connected therewith, and the residue of the commons should be leased on long time to responsible parties, reserving certain portions for specific purposes, as heretofore proposed by Comptroller Budd, or they should be sold absolutely, on a reasonable credit. Unless this is done, it seems likely that the city is soon to be

robbed of what she has remaining of this valuable property, by land speculators and others. It is not possible for the Comptroller, consistent with his other duties, to keep watch over it, or to gather the necessary information to establish the rights of the corporation in law —a duty equally out of the power of the City Counsellor.

Allow me to call your attention to the great increase which has recently been made by ordinances to the number of gas lamps. There are now near nine hundred burning nightly, at an expense to the city of $32 each per annum—and when all which have been ordered shall be put up, the number will be increased to over a thousand, and the cost to the city will be $32,000 to $35,000 a year—about double that of last year.

However desirable it is to have the lights extended to all parts of the city, it is proper that the Council should consider the cost, and it is to be borne in mind that the portion of the revenue applied to this object is so much taken from the fund for extending the Water Works, which is more indispensably necessary.

If the charter be so amended as to specially tax the property benefitted, for the lights [a system that should, in my opinion, also be extended to the Water Works,] no more will be demanded than the citizens are willing to pay for, and the number will not be increased faster than is required. But until this is done, it is to be hoped the Council will exercise discretion in calling upon the company for any further increase, if they should not think it desirable even to postpone the putting up for the present of some of the lamps already ordered.

There are doubtless other matters of public interest that I might with propriety mention in this communication, and which I may take occasion hereafter to refer to. Having already, however, taken up more of your time than I intended, and having in many of the suggestions offered but repeated those previously made to your predecessors, I beg leave to conclude with the assurance of my anxiety to aid your efforts in all things for the good of the city, and a tender of my best wishes for your entire success in promoting its prosperity and advancement. Respectfully,

L. M. KENNETT, Mayor.

COMPTROLLER'S REPORT.

COMPTROLLER'S OFFICE, }
ST. LOUIS, May 10, 1852. }

To the Honorable, the City Council:

Gentlemen: Ordinance 2400, Art. 3d, Sec. 2d, requires the Comptroller, at each stated session of the City Council, to lay before them a "succinct" statement of the city debt, etc., etc. In compliance therewith, I submit the following report. In my two former reports, the first dated February 20th, (called for by the "Special Committee,") and the second dated March 10th last, required by a provision of the City Charter, and both of which were published at the time, I exhibited to you a full and complete table of the *Bonded debt* of the city as it appeared on record in the

Bond-book on the first day of February, 1852, the day I entered the office; and as it remained in the same state without any, the slightest change whatever, until the close of the fiscal year, Saturday, April 10th ult., no bonds having been either issued or paid in the interval, I conceive that you would hardly desire or expect it to be presented to you for the *third* time. I therefore omit it, and respectfully refer you to either of those reports, and will proceed to add thereto such additional details of bonds issued and sold, as will complete it down to the present period:

Amount of the Bonded debt on the 10th April, 1851, close of the fiscal year 1851.....		$1,736,096 00	Int., $107,653 76
Since the commencement of the present fiscal year the following additional Bonds have been issued, viz:			
April 12, 1852, 50 Bonds for general sewers, at twenty years, Ordinance, 26 for 7th st., 10 for Poplar 14 for 13th	2621 $50,000		Int. $3,000 00
April 20, 20 B's. to improve wharf fifteen years,	2736 20,000		1,200 00
Mai 1, 20 harbor bonds, 25 years	2737 20,000		1,200 00
May 1, 25 Pac. Railr., 20 years	2610 25,000		1,500 00
115 Bonds.....		$115,000	
Amount.....		$1,851,096 00	$114,553 76
April 18, paid 1 harbor Bond, issued April 18, 1849, at 3 years, 1954		1,000	60 00
Total Bonded debt at date		$1,850,096 00	$114,493 76

The last above named bonds were issued to pay the instalment of 5 per cent. called for by the Railroad Company.

The foregoing bonds were sold for cash, on the date of their respective issues, no interest having accrued thereon, at the following prices, viz:

26 Seventh street sewer	at 95c nett.....	$24,700
24 Thirteenth and Poplar	93c "	22,320
20 Wharf Bonds	93c "	18,600
20 Harbor do.	93½c "	18,700

The 25 Pacific Railroad paid to the Company at par.

There were on hand unsold at the date of the last report—

Bonds to improve Old Limits	39
Pine street sewer bonds	5
	44

Of which I have sold, in addition to those before detailed—

4 Old Limit Bonds at 95c. nett, and 4 months' interest	$4,878 00
3 Pine street sewer at 95c. nett, (1 coupon cut off)	2,850 00
35 Old Limit Bonds 93c., (one coupon off)	43,550 00

The aggregate of the foregoing sales has averaged nearly 93¼ nett paid into the Treasury, without deductions in the shape of commissions or other charges or expenses.

I beg to refer you to the Auditor's and Treasurer's Reports of the receipts and expenditures for the full operations of those two branches of the Treasury Department for the fiscal year just closed; and the better to enable you to institute a comparison between the various items of the revenues for the past two fiscal years, I have prepared a table for that purpose hereto annexed, exhibiting the increase and decrease of each item separately, and the aggregate of the whole.

From the following table, it will appear that the greater portion of the lesser items of revenue exhibit but a small increase, while on the other hand, a few show a slight decrease from the preceding year—such, for instance, as the water-rents, lumber and wood master fees, &c.; (the last about 30 ℔ ct.;) but inasmuch as the receipts from the most of the sources are not generally large, separately, a slight increase or decrease does not materially affect the revenue in the aggregate.

Nearly the whole of the increase of the last over the preceding year, is derived from the items of real estate taxes, increased $89,765 56—about 39℔ ct. Merchants' taxes, $6,771, or 21 ℔ ct., and Harbor tax, $6,666 60—26 ℔ ct. There is also an additional item of $6,733 13, from the sales for taxes, under Ordinance No. 2,531.

SUMMARY OF INCREASE.

Real estate taxes	$89,765 56
Merchants' "	6,771 00
Harbor "	6,666 60
Sales from "	6,733 16
	$109,926 29
Special taxes,	1,550 97
From all other sources, collectively	5,021 26
Total increase of gross revenue	$116,508 52

Of 1851, over 1852, about 27 ℔ cent.

Comparative Table of the Revenue for the Fiscal years 1851 and 1852.

	1850.		1851.		Increase.	Decrease.	Remarks.
Licenses to pedlars; taverns, beer and dram shops, auctions, ferry, brokers, exhibitions, &c	$25,057 50		25,755 00		454 96		2 per cent.
Commissions from auctions	242 54						
	$25 300 04						
Cemetery	341 35		402 45		58 10		
Drays, cars, cabs, hacks, &c	7,286 00		9.156 00		1,870 00		25 do.
Redemption of property	3,113 86		3,297 66		183 80		
		36,044 25		38,611 11			
Surveying fees	172 00		238 00		66 00		
Water Works	30.913 78		30,824 85			118 93	
City Commons	1,161 90		1,610 32		448 42		
Ground rent	441 00		441 00				
Market stalls and stands	14.530 50		13.940 08			590 42	
Fines and fees	2.598 68		4,317 86		1,719 18		66 do.
		49,847 86		51,372 11			
Hay and coal, Market street scales	1.413 65		1.608 85		165 20		
do. North Market scales	1,837 05		1,842 20		5 15		
do. Front street scales	181 80		27 00				
		3,462 50		3,478 05		154 80	
Dividend Gas Light stock	1,800,00		1,700 00			100 00	
Contingent	181 99		344 52		162 53		
		1,981 99		2,044 52			
Merchants' taxes	31,888 91		38,659 91		6,771 00		21 do.
Taxes	232,755 63		322,521 19		89,765 56		39 do.
Harbor tax		14,355 69					
Harbor tax south of Pine street	25,054 17	10,698 48	31,720 77		6,666 60		26 do.
		289,698 71		392,901 87			
Wharf—Harbor Master	43.641 59		44,400 60		759 01		2 do.
Lumber Master	916 94		874 64			42 30	
Wood Master	2,340 50		1,789 11			551 39	30 do.
		46,899 03		47,064 35			

Comparative Table of the Revenue for the Fiscal years 1851 and 1852.

	1850.		1851.		Increase.	Decrease	Remarks.
Special taxes	5,101 65	5,101 65	6,652 62		1,550 97		
Sales of property for taxes ordinance 2,531,	.....		6,733 13		6,733 13		
				13,385 75			
Hospital	.....		.....	686 75	686 75		
		433,035 99		549,544 51	118,066 36	1,557 84	
Chesnut street sewer	.....		9,357 64		1,557 84		
Olive street sewer			550 00—	9,907 64			
		433,035 99		559,452 15	116,508 52		
LOANS.							
City Hall and Market House	69,178 03		46,587 19				
North Western Sewer	45,126 10		93,914 85				
Harbor	.....	12,521 97					
Do. South of Pine		16,851 75	29,376 72		17,820 00		
New Water Works	36 674 55		15,572 70				
City improvements and old balances	16,849 80		59 629 35				
Old limit improvement	.....		28,234 42				
Amount received on bonds sold, not rendered	67,011 57						
Chesnut street sewer	11,305 80		9,009 00				
Olive street sewer	9,281 25		9,378 30				
Pine street sewer	.....		4,713 89				
Fire department	.....		9,801 00				
		285,103 82		294,660 73			
Receipts	.....	718,139 81		854,112 88			
In Treasury April 8, 1850	.....	14,295 93		7,594 48			
		732,435 74		861,707 36			
Paid Treasury April 12, 1851		724,842 26		845,150 92			
Balance in Treasury	.....	7,593 48		16,556 44			

By referring to the table of estimates made at the commencement of the last fiscal year, and comparing it with the revenue actually received, it will be perceived that the expectations then indulged in have not been realized to their full extent, several of the most important items having fallen short of the estimate, viz: Water Works, Licenses, Merchants' Taxes, Wharf, &c.

	Estima'e.	Actual.	Deficit.	
Wharf	$50,000	$47,064 35	$2,935 65	
Merchants	40,000	38,659 91	1,340 09	
Water Works	35,000	30,824 85	4,175 15	
Licenses	27,000	25,755 00	1,245 00	
Vehicles	8,000	9,156 00		1,156 00
Stalls and Stands	15,000	13,940 08	1,059 92	
Scales	3,500	3,478 05	21 95	
Fines and Fees	5,000	4,317 86	682 14	
Gas Dividend	1,500	1,700 00		200 00
Redemption Taxes	4,000	3,297 66	702 34	
Commons	1,000	1,610 32		610 32
Contingent	1,000	344 52	655 48	
Taxes (general)	300,000	322,521 19		22,521 10
Harbor Tax (1-20)	15,000	31,720 77		16,720 77
Stores in block No. 7	13,000		13,000	

These various items, collectively, fall short, including the stores in block No. 7, not finished in time, nearly $26,000, from the estimate, which, however, is fully made up by excess in the general taxes, $22,521 10, and the Harbor tax, 16,720 77, doubled by the one-tenth in lieu of the one-twentieth as estimated.

Statement of the Amount to be appropriated.

The total gross revenue for the year 1851, exclusive of loans, as shown by table, is		$549,544 51
The special appropriations provided for by law, are		
To New Limits, one half its revenue, after paying its proportion of the Hospital and Quarantine expenses and interest on General Sewers	$70,668 50	
To Wharf Revenue	47,064 35	
To Harbor Tax	31,720 77	
To Special Tax Fund	6,652 62	
To School Fund, one-tenth commons revenue	161 03	
Deduct this amount		156,267 27
Balance for General Appropriations		393'277 24
One-half this amount for Interest, Lighting the city and new Water Works, per charter		196,638 62
Leaving for the various general expenditures of the city, for the present year, the remaining half		196,638 62

An excess over last year's portion for this purpose, of $35,470 87.		
I estimate the interest for the current year, at	$120,000 00	
Lighting the city (greatly extended)	30,000 00	
Balance for new Water Works	46,638 62	
		196,638 62

The estimates for the general appropriations for the year will be prepared and submitted for your consideration in due time.

I take leave to call your attention to the present condition of the City Commons, and respectfully suggest to you the necessity, arising from various considerations, of taking some immediate steps in relation thereto, not only to protect the city's title to the same, and saving her perhaps much litigation hereafter, but also to derive therefrom some immediate advantage in the shape of revenue.

I am given to understand from various credible sources, that in several instances, persons have trespassed upon the rights of the city by entering on and taking possession of lots therein, with a view, perhaps, of deriving merely an immediate advantage or temporary accommodation by the temporary occupation of the same, but which might, if silently acquiesced in by the city, and they permitted to remain, finally involve her at some future period in much trouble, and perhaps expense in ejecting them therefrom, even if she succeeded in so doing. In other instances, there are persons who now are or very recently have been engaged in quarrying rock, not only on portions of the city lots, but also in the streets or roads set aside for public use; by what authority, or with whose permission persons have been so engaged, I know not, nor can I find any authority for their acts, consequently they must be considered as trepassers, as doubtless they are, and should be so dealt with.

The lots in the Commons, the title to which is still vested in the city, amount in the aggregate to 591 19-100 acres, and were valued by Assessor Magehan, in the year 1850, at $581,291, from which large amount not one cent of revenue has been derived for a number of years.

I humbly conceive that the time has arrived when they should be made to contribute to the revenue of the city in some manner.

The question is how? There are but two modes. Either by a sale of the fee simple, or by leasing them for a limited period. The latter mode, I am inclined to think, would be the most judicious, as long as they have not attained their maximum value.

From their favorable position, high situation, numerous and valuable improvements being constantly made in that quarter, and the constant and steady increase of the population of the various suburbs and environs of the city, there can be hardly a doubt that

their value will be much enhanced within a few years, I would therefore suggest the expediency of the latter mode, viz: leasing them for a term of years.

In any event, whatever action you may think advisable to take upon the subject, and whatever dispositions, if any at all, you deem it expedient to make in relation thereto, I cannot but urge upon your attention the necessity of appointing some proper officer to take charge of the commons in person. The interest of the city would, I doubt not, be greatly subserved by the appointment of such an officer, to whom should be specially and solely assigned every duty having any connection with, or relating to the commons.

The collection of the water rates, is another subject that I would respectfully suggest to your consideration, with a view to an increase of the revenue from that source.

My immediate predecessor having, in his report to your body of October last, gone over the whole ground relative to this branch of the subject, leaves me but little to add, further than to say, that I heartily concur in his suggestions, and that the revenue from this source might in all reasonable probability, be much increased by entirely disconnecting the collection thereof from any other branch of that department, and assigning it as a special matter to an officer appointed for that purpose solely.

As directed by ordinance No. 2,788, I advertised for rent the new city stores in block No. 7, in the several papers authorized to print for the city, as also by notice posted upon each one of the buildings; but up to the present date, have rented but one, that at the corner of Market and Front streets, to Samuel B. Wiggins, for the price ($2,000) established by ordinance.

No applications have been made for the others.

I am not prepared to say that the rents established by the Councils, when the cost and value of the buildings are taken into consideration, with the single remark, that either a reduction of the rents, or leasing them to the highest bidder, may perhaps become necessary to secure their immediate occupation.

In connection with these buildings it was also made my duty, by ordinance No. 2,803, approved Feb. 27 last past, to effect, with the approval of the Mayor, a temporary loan of $24,000 for the completion of these buildings, said loan to be repaid out of the first rents arising therefrom.

That duty I found it impracticable to discharge; but as that which seems to have been the main object in the above ordinance has been accomplished—the completion of the buildings without any unnecessary delay, by the parties employed thereon being induced to progress with them to their completion, all that now remains to be done upon the subject is to provide the means of payment, as the parties have patiently awaited the action of the Coun-

cil in the matter. It should be done by permanent loan at once, as the amount necessary cannot be spared out of the current revenues.

The Supreme Court having very recently decided the appeal of the city of St. Louis, in the Hospital case, adverse to the city, and affirmed the judgment of the lower Court, the amount necessary to pay said judgment and costs, something over $4,000, will necessarily have to be provided. Respectfully submitted,

FRED. L. BILLON, Comptroller.

VALUE OF PROPERTY IN NEW ORLEANS IN 1851.

Mr. FRANCIS TURNER, one of the Assessors at New Orleans, furnishes the following statement of the assessed value of property in that city:—

An abstract of the assessment of nine districts, Parish of Orleans, for 1851.

Districts.	Real estate.	Negroes.	Capital.	License.
First	$5,443,040	$484,950	$163,080	$3,347
Second	6,536,570	669,680	461,550	7,792
Third	18,154,900	530,850	6,904,775	54,443
Fourth	8,529,200	421,850	2,417,650	15,356
Fifth	7,593,950	774,550	650,700	13,032
Sixth	4,295,850	645,100	411,950	6,483
Seventh	2,823,770	280,750	261,650	4,014
Eighth	2,447,900	359,400	122,450	2,845
Ninth	2,447,900	359,400	122,450	2,845
Total	$58,273,080	$4,526,530	$11,516,255	$110,157
Negroes	4,526,530			
Capital	11,516,255			

Total assessment, 1851, $74,315,865

State taxes on the above, 21 cents per $100	$156,063
State Licenses	110,157
Total amount of State taxes	266,220
Assessor's commission 3 per cent	$4,681 89

The above is the total compensation of 9 Assessors.

Merchants' Magazine.

COMMERCIAL STATISTICS.

Commercial Marine of the United States.

Statement exhibiting a condensed view of the tonnage of the several districts of the U. S. on the 30th June, 1851.

DISTRICTS,	Registered tonnage.	Enrolled and licensed tonnage.	Total tonnage of each district.
	Tons and 95ths.		
Passamaquoddy, Maine....	13,680 86	11,668 47	25,349 38
Machias.....do.....	2,884 03	19,992 85	22,876 88
Frenchman's Bay..do.....	2,041 94	32,857 87	34,899 86
Penobscot.....do.....	6,173 52	34,635 68	40,809 25
Belfast.....do.....	11,909 01	32,926 21	44,835 22
Bangor.....do.....	11,130 72	16,440 87	27,571 64
Waldoborough.....do.....	46,258 90	57,334 56	103,593 51
Wiscasset.....do.....	6,782 90	12,935 31	19,718 26
Bath.....do.....	78,130 12	25,665 79	103,795 91
Portland.....do.....	69,857 28	27,714 42	97,571 70
Saco.....do.....	1,165 58	1,660 30	2,825 88
Kennebunk.....do.....	8,366 36	2,838 08	11,204 44
York.....do.....	.....	1,263 66	1,263 66
Portsmouth, N. Hampshire	17,850 17	7,577 37	25,427 54
Burlington,...Vermont.....	.....	3,932 31	3,932 31
Newburyport, Massachusetts	18,766 11	7,940 69	26,706 80
Ipswick.....do.....	.....	492 55	492 55
Gloucester.....do.....	1,825 61	21,610 45	23,436 11
Salem.....do.....	21,190 22	9,308 14	30,498 36
Beverly.....do.....	.....	3,948 78	3,948 78
Marblehead.....do.....	860 68	3,490 78	4,351 51
Boston.....do.....	296,657 51	46,278 53	342,936 09
Plymouth.....do.....	2,989 56	7,733 40	10,723 10
Fall River.....do.....	2,030 56	10,040 00	12,070 50
New Bedford.....do.....	122,530 90	8,878 51	131,409 46
Barnstable.....do.....	8,035 46	64,961 93	72,997 44
Edgartown.....do.....	5,907 61	2,171 53	8,079 19
Nantucket.....do.....	23,583 19	3,169 52	26,752 71
Providence, Rhode Island..	8,183 25	7,369 30	15,552 55
Bristol.....do.....	10,229 39	1,948 24	12,177 63
Newport.....do.....	5,784 78	4,535 36	10,320 19
Middletown, Connecticut...	.....	12,757 53	12,757 53
New London..... do.....	23,073 52	17,334 15	40,407 67
Stonington.....do.....	13,191 37	7,111 14	20,302 51
New Haven.....do.....	5,541 00	12,767 44	18,308 44

Statement exhibiting a condensed view of the tonnage of the several districts of the U. S. on the 30th June, 1851.

[Continued.]

DISTRICTS.	Registered tonnage.	Enrolled and licensed tonnage.	Total tonnage to each district.
	Tons and 95ths.		
Fairfield,....Connecticut.....	.....	24,403 60	24,403 60
Champlain,...New York.....	.....	4,207 70	4,207 70
Sackett's Harbor .....do.....	.....	7,105 93	7,105 93
Oswego.....do.....	.....	26,323 21	26,323 21
Niagara.....do.....	.....	605 94	605 94
Genesee .....do.....	.....	686 01	686 01
Oswegatchie.....do.....	.....	1,985 34	1,985 34
Buffalo Creek .....do.....	.....	43,603 13	43,608 13
Sag Harbor.....do.....	8,672 52	4,135 43	12,808 00
Greenport.....do.....	3,088 18	4,302 88	7,391 11
New York.....do.....	504,309 27	436,884 47	931,193 74
Cape Vincent.....do.....	.....	2,496 19	2,496 19
Cold Spring.....do.....	2,505 90	102 17	2,608 12
Perth Amboy, New Jersey....	214 44	22,551 45	22,765 89
Bridgetown .....do.....	.....	14,835 07	14,835 07
Burlington.....do.....	.....	6,797 05	6,797 05
Camden.....do.....	.....	15,663 41	15,663 41
Newark.....do.....	.....	5,773 33	5,773 33
Little Egg Harbor....do.....	.....	6,639 26	6,639 26
Great Egg Harbor ...do.....	163 36	16,258 43	16,421 79
Philadelphia, Pennsylvania...	69,425 42	153,003 48	222,428 90
Presque Isle.....do.....	.....	8,210 35	8,210 35
Pittsburg.....do.....	.....	53,634 34	53,734 34
Wilmington,....Delaware.....	663 23	6,152 44	6,816 67
New Castle .....do.....	.....	5,064 19	5,064 19
Baltimore,.....Maryland....	95,387 23	65,124 41	160,511 64
Oxford .....do.....	.....	12,636 45	12,636 45
Vienna.....do.....	289 00	14,180 87	14,469 87
Snow Hill.....do.....	.....	9,851 59	9,851 59
St. Mary's.....do.....	.....	2,290 48	2,290 48
Town Creek.....do.....	.....	2,124 73	2,124 73
Annapolis.....do.....	.....	2,659 58	2,659 58
Georgia, District of Columbia	2,902 84	20,000 57	22,906 46
Alexandria,.....Virginia...	2,831 15	7,280 72	10,111 87
Norfolk.....do.....	9,595 59	14,065 61	23,661 25
Petersburg.....do.....	948 76	1,978 60	2,927 41
Richmond .....do.....	2,532 13	4,308 01	6,835 14
Yorktown.....do.....	53 41	5,188 11	5,241 52

Statement exhibiting a condensed view of the tonnage of the several districts of the U. S. on the 30th June, 1851.

[Continued.]

DISTRICTS.	Registered tonnage.	Enrolled and licensed tonnage.	Total tonnage of each district.
	Tons and 95ths.		
Tappahannock, ...Virginia....	376 52	5,283 17	5,659 69
Accomack C. H.....do.....	.....	4,361 78	4,361 78
East River .....do.....	.....	1,650 84	1,650 84
Yeocomico .....do.....	.....	3,388 57	3,388 57
Cherrystone .....do.....	.....	1,037 16	1,037 16
Wheeling.....do.....	.....	3,923 89	3,923 89
Wilmington, North Carolina..	6,057 26	6,330 19	12,387 45
Newburn .....do.....	1,425 34	3,466 31	4,891 65
Washington.....do.....	1,677 29	4,938 29	6,615 58
Edenton.....do.....	58 72	1,069 31	1,128 08
Camden .....do.....	1,231 26	11,079 26	12,310 52
Beaufort.....do.....	973 26	1,440 93	2,414 24
Plymouth .....do.....	1,376 14	1,230 81	2,607 00
Ocracoke.....do.....	.....	1,428 15	1,428 15
Charleston, South Carolina...	15,438 84	16,472 38	31,910 27
Georgetown .....do.....	1,773 40	1,503 74	3,277 19
Beaufort .....do.....	.....	.....	.....
Savannah, ...Georgia....	11,711 19	10,554 50	22,265 69
Sunbury.....do.....	.....	.....	.....
Brunswick .....do.....	.....	489 67	489 67
Hardwick.....do.....	.....	.....	.....
St. Mary's.....do.....	652 37	777 50	1,429 87
Pensacola .....Florida....	1,121 68	1,201 02	2,322 79
St. Augustine.....do.....	.....	.....	.....
St. Mark's.....do.....	.....	281 60	281 60
St. John's.....do.....	.....	309 92	309 92
Appalachicola.....do.....	.....	2,050 36	2,050 36
Key West.....do.....	2,632 59	1,767 46	4,400 10
Mobile,.....Alabama...	8,579 36	18,747 60	27,327 01
Pearl River,.....Mississippi..	.....	1,236 21	1,236 21
Vicksburg.....do.....	.....	168 48	168 48
New Orleans.....Louisiana...	81,159 32	170,740 77	251,900 14
Teche.....do.....	.....	1,384 79	1,384 79
Nashville .....Tennessee...	.....	3,587 67	3,587 67
Louisville .....Kentucky...	.....	12,937 90	12,937 90

Statement exhibiting a condensed view of the tonnage of the several districts of the U. S. on the 30th June, 1851.

[Continued.]

DISTRICTS.	Registered tonnage.	Enrolled and licensed tonnage.	Total tonnage of each district.
	Tons and 95ths.		
St. Louis,.....Missouri...	.....	34,065 46	34,065 46
Chicago,.....Illinois...	.....	23,103 45	23,103 45
Cuyahoga.....Ohio...	.....	36,070 50	36,070 50
Sandusky.....do.....	.....	4,858 38	4,858 38
Cincinnati.....do.....	.....	14,187 18	14,187 18
Miami.....do.....	....	3,236 13	3,236 13
Detroit,.....Michigan...	.....	40,319 46	40,319 46
Michilimackinac .....do.....	.....	1,455 40	1,455 40
Galveston,.....Texas...	297 89	3,269 22	3,667 16
Saluria.....do.....	.....	588 52	588 52
Astoria.....Oregon...	1,063 43	.....	1,063 43
San Francisco,...California...	38,406 39	19,657 15	58,063 54
Sonoria.....do.....	.....	327 43	372 43
Point Isabel,.....Texas...	.....	657 49	657 49
Milwaukie, ...Wisconsin...	.....	2,946 10	2,946 10
Total.....	1726307 23	2046132 20	3772439 43

TREASURY DEPARTMENT,
Register's Office, Dec. 5, 1851.

N. SARGENT,
Register.

Statement showing the number and class of vessels built, and the tonnage thereof, in each State and Territory of the United States, for the year ending June 30, 1851.

States.	Class of vessels.					Total number of vessels built.	Total tonnage. Tons and 95th.
	Ships.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.		
Maine	102	45	94	9	4	254	77898 49
New Hampshire	7	...	...	...	...	7	8158 06
Vermont	...	...	4	...	...	4	561 29
Massachusetts	50	4	78	1	...	133	41323 98
Rhode Island	3	1	4	3	1	12	3056 60
Connecticut	1	...	22	7	5	35	3414 20
New York	25	2	60	88	54	229	76805 02
New Jersey	1	...	47	20	2	70	5869 43
Pennsylvania	4	3	14	103	76	200	28623 10
Delaware	1	...	7	4	3	15	2058 47
Maryland	15	10	101	...	4	130	18027 04
District of Columbia	...	...	1	71	2	74	4439 17
Virginia	...	...	16	7	4	27	1778 31
North Carolina	...	...	32	1	...	33	1724 82
South Carolina	...	...	4	...	1	5	625 12
Georgia	2	...	1	...	3	6	2369 15
Florida	...	...	4	...	...	4	275 53
Alabama	...	...	2	3	...	5	354 62
Mississippi	...	...	...	...	...	.....	.....
Louisiana	...	...	15	1	8	24	2327 05
Tennessee	...	...	...	...	1	1	225 10
Kentucky	...	...	...	...	88	38	8861 49
Illinois	...	...	4	...	...	4	313 56
Missouri	...	...	...	5	6	11	2066 04
Ohio	...	...	6	...	19	25	6035 51
Michigan	...	...	5	3	1	9	1365 92
Wisconsin	...	...	1	...	...	1	76 39
California	...	...	...	...	1	1	69 69
Total	211	65	522	326	233	1357	298203 60

N. SARGENT, Register.

TREASURY DEPARTMENT,
Register's Office.

Religious Liberty.

Civil and political liberty are absorbing questions of this age. Is religious liberty of less importance? Europe, where political offences against the laws, or *dictum* of the sovereign, are punished with severity, is agitated on the subject before us; and were the press and people free to discuss public and private wrongs, she would be as restless as is the mighty ocean. It is true, the Western Journal does not profess to investigate matters purely religious or ecclesiastical; but this has been discussed and handled so much by rulers and statesmen, from time immemorial, that it has become *secularized*, and rendered common. Religious liberty is a right upon the sanctity of which no civil ruler dare intrude; but those "dressed in a little brief authority," have, by their officious interference, detracted from the sacred character it used to sustain and cheapened its real importance.

How it should have entered the mind, that one *creature* should presume to lay down rules to guide the religious sentiments and worship of another, is unaccountable. Has A. any authority to instruct B. on what subjects he may think, write or speak? If he disturbs the public quiet, the State will see to that. Much less may he interfere with the worship which B. offers to the Deity; for this is a matter purely between man and his maker.

The *genius* that invented the word *Toleration* in matters pertaining to the conscience and worship of the Being that requires *spiritual* adoration, has not come down to us in history. It would seem quite as pertinent to talk about *toleration* in the use of the organs of respiration; for one is not more an inalienable right than the other. Breathing is inseparable from our nature as living beings; so the right to worship, according to conscience, is a dictate of natural religion, and confirmed by Bible teachings—the only directory in matters of faith, practice and duty.

The sacred writers teach that men are accountable to God only for their worship: they would not receive the homage due to their maker. Power was conferred on the Apostles, which made them appear to be super-human beings, and adoration was offered: but they rejected it, affirming they were frail men—adjuring the people to "worship God." "We have not dominion over your faith but are helpers of your joy." The inspired words which they uttered, are the only guides of our faith and conduct. "All scripture," not tradition nor conjecture, "is given by inspiration of God." What this enjoins alone is duty: nothing else is binding on the disciples of Christ. "The Lord is our law-giver —the Lord is our king—Lord of lords and King of kings—the blessed and only potentate.* All directions touching worship and

* Isaiah 33, 22. Revelation 17, 14. 1. Tim. VI, 15.

laws from earthly monarchs, must succumb to those of the King of kings, the one Law-giver in Zion, if they conflict or come in contact with them. As one human being cannot know the conscientious sentiments of another; it seems proper that God only, who tries the heart and understands the motives, should be the sole judge in matters pertaining to the conscience. Daniel understood his rights centuries before the advent of the Messiah. An irreversible decree had gone forth, that for thirty days no one should "ask a petition of any god or man," save Darius the king. (Dan. 6, 7.) But he would not yield his rights to earthly potentates. He knew what God required, and he would not compromise the matter—attempt to throw off the responsibility and hide behind the decree of a wicked monarch. As God only can *examine* the conscience, and take cognizance of its actions and decisions, Daniel inferred that to God only was he responsible. He was willing to risk the matter here, and was preserved amidst devouring lions. Peter assumed similar responsibility, repudiating the interference of rulers.† Suppose Darius had been a *professedly christian king*, and yet his decrees contravened the doctrine of soul-freedom as inculcated in the great charter of our rights, the Bible? Daniel would have had as much right to dissent and throw himself upon God for protection, as he did under the heathen ruler. *Christian* rulers have differed as widely in their decrees from God's instructions as idolators. There is no safety in human laws, that regulate the conscience.

But is not *uniformity*, one trodden path for all in religious matters, the safest way both for government and people? The government has nothing to do with religion. It can neither create nor destroy it. It can make creeds and acts of uniformity, and hold the sword *in terrorem* over dissenters; but it cannot make men virtuous by law or restraints: this matter lies beyond the province of legislators. When the emperor Constans in the 4th century made inquiries into the religious levity of the Donatists, they answered: Quid est imperator cum ecclesia? That is, they inferred that as he was a temporal prince only, he could know nothing about the heart; so he was not qualified to judge in matters purely religious. This inquiry shows too, that as christians, they were disconnected from the State, and had no dependence on it for aid, support or advice in its internal regulations or polity. They would not degrade religion by allowing room for the insinuation of its enemies, that the author of it would not take care of it without the panoply of worldly power.

In the early ages of the christian church, the disciples take it for granted that they were invested with the right to fill the place vacated by the treachery of Judas—to select the seven deacons—

Acts V. 29.

the travelling companion of Paul, and to manage cases of discipline.* This is a common-sense principle. Who so likely to make a wise choice as persons of the same profession, art or occupation? Who so suitable to elect a mayor for the city of St. Louis, as the citizens? Would they submit to the dictum of the Governor of Illinois if he should assume to appoint one for them; or would they submit to the appointment of a mayor by the Governor of the State of Missouri? On the choice of pastors, the N. T. gives no clearer proof than that of the election of elders. Acts 14, 23. But all protestants, except the advocates of prelacy, infer this right by parity, and maintain it was stolen away in the dark ages. History gives it to the churches till the age of Constantine, when it is gradually and imperceptibly stolen by wily bishops and priests.

A passage in the Koran, written in the seventh century, inculcates indulgence towards those differing from the "*faithful*," and Akbar, the wisest and most tolerant monarch of Mahommedan India, says: "Do not molest mankind on account of their religious principles." In a letter addressed to the king of Portugal he requests, that translations of the *heavenly books* be sent to him. The present Sultan exhibits more liberality than most European Courts; for he allows christians of all persuasions to enjoy their liberty in his dominions, and to erect houses of worship in sight of his palace: one or more protestant house is already erected in Constantinople. Mr. Jefferson who, by his political opponents, is described as infidel in his sentiments, observes that "error can do little harm, if truth be left free to combat it."

It will surprise the scholar to see how little the books say about religious liberty as a particular subject, or one to which the reader is directed. You are not referred to it in the contents neither of Rollin or Mosheim, though the ecclesiastical historian mentions it in the body of his work. It seems that Locke and other writers near the close of the 17th century, were very cautious in their expressions in favor of *toleration*, and their books, though professedly printed in Englaud, were actually printed on the continent! This is clear proof that tyranny had been at its bloody work, forcing conscience, forbidding the free exercise of religious rights, and rendering the advocates of it unpopular and contemptible, that they might not boldly plead its cause.

* Acts 1, 26—14, 23. 2d. Cor. 8, 19. Do. 2, 6.

In the choice of the apostle, the Greek is, edoken kleerous, gave or cast lots. The Latin is, Jecerunt igitur sortes eorum. In that of the elders the Greek is formed of *teino*, to lift up or extend, and *cheir*, the hand. The Latin is, Quumque ipsis per suffragia creassent per singulas ecclesias presbuterous. Same word is used in regard to Paul's companion. Tyndal's version on the choice of elders is: "When they had ordened them seniors by eleccion in every congregacion." When God *ordains*, the word is frequently Orizo—when he chooses, it is eclegomai. In the selection of elders, who is there to *lift the hands*, if you exclude the disciples? If Paul, who is the only apostle present, is chairman, there is none but Barnabas to vote; but the Greek participle is plural, and shows that more than one held up the hand.

The question has been mooted *when* religious liberty was openly preached, and who was the author? Some say Jeremy Taylor in 1647—Dr. Owen in 1648—John Goodwin, a chaplain of Cromwell, in 1644. But Bancroft, our own celebrated historian, has shown that in later years, it is a plant that blossomed earliest in these United States. His words in regard to Roger Williams are: "He was the first in modern christendom to assert, in its plenitude the doctrine of the liberty of conscience, the equality of opinions before the law and in its defence, he was the harbinger of Milton, the precursor and superior of Jeremy Taylor." (Vol. I, 375.) He pleaded for it at the peril of his life, with effective arguments and powerful eloquence. This is a very different thing from *toleration*: it is the birth-right of every human being, which he can no more barter away than his responsibility to his country or family. *Toleration* implies the assumed authority in the sovereign to control and curtail religious liberty, and shows it is enjoyed only in a partial degree; that subjects are entitled to so much only, as the State sees fit to grant. Toleration is better than nothing; but those who allow it, convict themselves of fraud and ill-gotten power: for, as religious liberty is a perfect and inalienable right, the government that talks about *toleration*, has already wrested from its subjects that which did not belong to it, and the *partial* compensation which it promises, is evidence of its high-handed misdemeanor. It is tenfold worse than the robber, who has taken your purse, and then tries to bribe you to silence by *half* its contents. No, says the freeman, aut omnia aut nihil.

Its history in this country, now only two centuries and a quarter old, is not so well understood as many apprehend. In 1652, Sir R. Salstonstal, "grieved at their tyranny and persecution." writes to the ministers in Boston, which Mr. Cotton answers, that "we are not so vast in our indulgence or *toleration*, as to think the men you speak of suffered an unjust censure." They had been fined, imprisoned and whipped!! In 1677, Dr. Increase Mathew, in his election sermon says: "I believe that antichrist hath not a more probable way to advance his kingdom of darkness, than by *toleration!*" This he reprinted in 1685. But before the American revolution so much light had been emitted upon this subject, that most people began to understand their rights. Instead of *asking as a favor* for *toleration* in religious concernments, some of the petitions *demanded* the free exercise of their rights—called upon the rulers to abolish all laws which infringe upon conscientious rights, and praying to be relieved from taxation in religious matters.

From the parable used by the Saviour, "Compel them to come in that my house may be filled," compulsion in religious matters has been argued. Those who are so kind as to shape doctrines

for our faith, and rules for our manners, in order that no discord may be heard in the notes of our creed, urge this parable as a charter for their benevolent work. They think much will be saved in having but one liturgy for the whole christian world, so that all the faithful may be united in one universal fold, under the supervision of one far-seeing shepherd. The establishment of *uniformity* by law has been attempted to be carried out by fire and sword, the strong arguments of despots, but has not accomplished its purpose. You may make the creed of a country *one*, but this does not and can not graduate and control the sentiments and feelings; these, the law can not reach any more, than it can the shape of the face or that of the leaves in the forest.

It seems difficult to account for the weakness of the churches, soon after the time of Constantine, in yielding their religious rights to the love of domination in their ecclesiastical leaders. Surely, "darkness must have covered the world, and gross darkness the people," or they would not have succumbed to the rapacious demands of those in authority. But *civil* liberty has been frequently stolen away from confiding subjects; and it should not surprise us that *dearer* rights should go in a similar way from an ignorant people. Copies of the Bible "were few and far between," and those extant were in the hands of those whose interest and object it was to absorb all the power, and concentrate it in themselves. It is as true in religious as in civil matters, that power is always stealing away from the *many* to the *few*. There are influences working out of sight of the common brotherhood, the tendency of which they could not comprehend or fathom, which finally bereaved them of the last vestige of liberty, and riveted their chains by the very instruments, that they had been made to believe, would render their cause triumphant in all the earth. For agencies can be brought to bear in stealing away religious rights, that have never been "dreamed of" in the philosophy of political legerdemain. Since the seventh century, less than half a dozen rituals, in several editions it is true, have shaped the faith of the million masses, and amalgamated them together as the "sacramental host of God's elect"—their obsequiousness to their leaders equalled only by their ignorance of God's word and his requirements.

Little is understood of this vital matter in Europe, up to the present hour. The censorship of the press prevents the circulation of the liberal sentiments entertained in this country. Persecution grasps and punishes its victims not only in *papal*, but in *protestant* districts. The Lutheran hierarchy is as intolerant as the papal in Spain or Italy. While Romanists maintain the right of persecution and destruction of heretics—repudiating toleration as a troublesome evil; Protestants admit the doctrine of religious

liberty in *theory*, but at this day in Germany they deny it in practice: dissenters are cruelly treated.*

Is it not better for the state and their subjects, that one creed govern all, and so bring them into happy uniformity? If Luther and Calvin had never broached their *novelties*, would not Europe have been much happier? She would have saved millions of lives, and rivers of blood would not have been spilled, and the memorable medals would not have been struck, *Ugonottorum Strages*, 1572. If the Bible had been followed, if the freedom it inculcates had been enjoyed; if the State had let religion alone, these results would not have succeeded. Religion and government worked harmoniously under Moses and the kings; but the whole frame-work is changed—the religion inculcated in the New Testament knows nothing about kingly or majestical power in the churches. "My kingdom," says Jesus, "is not of this world." It has no connexion with any form of government, though its disciples can live under any. David's was composed of a mixture—Caesar's was wholly earthly; but the Jewish writers say that Messiah's kingdom is to be "*intellectual*, not *corporeal*." His subjects are all *spiritual*, begotten of the spirit, and all their weapons of warfare are also spiritual: they cannot fight with weapons of war to carry on their cause.

How, in this free country, should we like it, if the legislators should decree that all should be Democrats or Whigs, under penalty of death? If decrees cannot change the mind touching *political* subjects; much less can they, in regard to interests which are infinitely higher. Such a measure, if it were possible, would very much quash enterprise in all secular concerns—it would cripple genius—the pinions of science would flag—the onward march of improvement would retire from its mission of benefitting the world, and a universal leaden slumber would paralyze every limb that stirs. How full of feculence and putrefaction would our atmosphere be charged, if the winds were not allowed to agitate the ocean! So in regard to both our political and religious atmosphere. What improvements for the last three centuries in the arts and sciences have those nations made, which shape and control religion purely by law? Litterally nothing. Their farming utensils are as unfitted for service as unwieldly, as their schools keep the same dull unprofitable routine,—not a useful invention is chronicled—the thousand expedients to save human labor, and expedite nature's great machinery, which steam power contemplates, is unknown—the electric wire comes from abroad with all that betters the condition. So, that if you could make all adopt the same

* The British Banner says: "We have not for years read anything that has excited a grief more deep or a concern more oppressive. The power that be throughout the continent seems to conspire as one man to suppress evangelical religion and religious liberty."

creed in religion, if all ideas were run in the same mould, and uniformity with monotonous sameness was every where witnessed, the world would be a great loser. It would seem fair to infer, that as God has made no two *faces* alike, so no two *minds*.

Why our government, which secures the full enjoyment of religious liberty to every foreigner that touches our soil, and protects him in the worship of God as he pleases, makes no arrangements that our consuls and diplomatists abroad should enjoy similar privileges, seems paradoxical. If the believers in Islamism, or disciples of Confucius, should introduce their peculiar forms of worship, no one would molest them: the government would see that no one interfered with their peculiarities. Why, then, in treaties with other nations, does not ours see to it, that our representatives have similar privileges? This is *fair*, and anything less is *unfair*, partial and oppressive. In most treaties is a clause securing privileges "enjoyed by the most favored nations." But our diplomatists in Spain and Portugal do not enjoy the same privileges, as those from Italy: they are denied religious rights, and hence, do not stand with the "most favored nations."

Out of gratitude to our minister at Rome for his interference in protecting property, claimed by the pope, in the late civil commotion, a protestant chapel was tolerated; but generally such a privilege is not thought of. Several consuls who have gone out within the last few years, are pious men, and desire religious privileges: shall they be proscribed in this respect? If this matter has escaped the notice of the government, if it be regarded in a light so trivial as not to merit attention, the agent himself ought to protest against being sent to reside in a country to guard the pecuniary and political rights of citizens, unless he can be protected in the enjoyment of as large privileges, as the agents of that country enjoy in this. The time is not far distant, when this matter will be regulated, and our diplomatists allowed the widest liberty in religious affairs. Is the protection of civil and political rights so much more important than religious? An envoy's *person* is regarded sacred, and the flag with "stars and stripes," flaunting over his domicil, furnishes an aegis of protection against all enemies, surer than that of swords or bayonets. If the nations deny us the immunities which we grant their agents, why should they complain, if we cut off intercourse, and recal those who represent us? A slight insult frequently terminates in such a result: the refusal to liquidate a small demand is similar in its consequences. The rights of worship are professed by all nations; hence, provision for it ought to be made in all our intercourse with other nations, and as we grant all that is desirable, we ought to expect as much from them. It will cost nothing. It neither implies nor needs custom-house exactions, and should be as free as the water in our mountain streams or the air on our endless prairies.

Influences are at work on the continent, that will ultimately revolutionize those mighty nations on this momentous question—influences that, like the pent-up fires in Vesuvius, will sweep away the errors and traditions of former ages, and completely disenthrall the down-trodden and suffering millions. The pure word of God will be more widely circulated, perused and believed; the alarming indifference, the stoical apathy to *divine truth*, in contradistinction to human teachings, which for ages, like a heavy incubus, has settled down upon the masses, will be changed for interest in the inspired oracles of God, as the only means of man's moral redemption. Kings and prelates may fight against these means of enlightenment, and try to suppress inquiry into the happy state of a people that enjoys perfect religious liberty; but in vain. This is emphatically the age of investigation, inquisitiveness, and you can not quash the curiosity, that wings every mind that reads or hears about American freedom.

Neither civil nor political liberty is *perfect*, when religious liberty is imperfectly enjoyed.

Religious liberty never has existed and never can exist, when Church and State are united. Even in New England, that bright spot in the western world, where the tenure, by which civil and religious matters were blended together, was very slight in comparison with its strength in many countries, soul-freedom was punished as an intruder and ostracised by law. All who did not coincide with the majority in their peculiar views of church polity, could not enjoy civil rights; they could not vote for their own rulers, nor be regarded as freemen. Much less can it exist, where oppression is the trade of bigots and political religionists; who frame laws to produce uniformity in sentiment, but which affect only the *lip*, not the *heart;* thus engendering a nation of hypocrites—swearing to a national creed, in scarcely an article of which is confidence placed. Laws accomplish little more than create sects and multiply opponents. People that entertain no particular religious views at all, will stand up in every quarter, where enactments are made to coerce all to one summary of faith, and plead for innate rights, which they think have been invaded. Whereas an agreement in the essentials of religiou would prevail, if legislators did not attempt to coerce into wedlock parties that God teaches in the N. T. should be as separate as Jews and idolaters. In these United States, where no law, trenching upon conscience, exists, and where the Constitution forbids all enactments on this subject, the fundamental doctrines of the Bible are believed and practiced more generally than in England, where all the force of the favored establishment secures *lip-service* from favorites, but *curses* from the masses. She is the most enlightened nation of Europe, enjoying a larger measure of civil liberty, and *tolerating* all sects; yet dissenters lie under most degrading dis-

abilities, and groan under heavy burdens. It is not to be questioned that the national church would be better sustained, and would accomplish much more for the Master, if her unnatural marriage with the State were dissolved. The buoyancy of soul-freedom would make her vigorous as in youth, and her step elastic as that of the fabled goddess. It is believed, a grand majority would cast their suffrages for a divorce; the titled and salaried bishops being the great obstacle to perfect liberty in religious matters.

Owing to the ignorant condition of the world, when the churches were cheated out of their rights, we may look upon them with an indulgent eye. All the learning that was in existence, was concentrated in the clergy: the Bible was in their hands only, and the people were unable to fathom the schemes of their rulers, and so save themselves from thralldom. But a church which in this enlightened age should suffer any convention, council, society or body of men, to invade its internal rights, would be regarded as a traitor to the king of Zion. If he has entrusted *them* with power, the attempt to transfer it to *others*, proves that they are recreant to duty and unworthy the high trust committed. There may be *deputies* and *substitutes* in secular concerns, but not even in the *right of suffrage*: much less in the rights entrusted to the disciples of the Saviour. Can you forgive that parent who, perfectly able and competent, yields his child to be trained and educated by another? But the moral destinies of the world, and purity of religion, depend, in a large measure, on the faithful performance of duty by christians and their retention of inalienable rights; for when yielded in primitive ages, corruption followed, and clerical ambition triumphed. So it would be now, if we relinquish to any claimant our birth-right, religious liberty. The Bible gives it to us—the constitution of our beloved country guarantees it to us, and palsied be the hand, and dumb the tongue, that would surrender it, or would not speak in its favor. We cling to it so long as a drop of blood circulates in our veins, or an atom of flesh quivers on our bones.

LIBERTAS.

Mo., June, 1852.

NIAGARA FALLS.

From Meyer's Universum.

To the ancients the larger and fairer portion of this globe was a more profound mystery than was the expanse of the heavens. It was reserved for the Genius of modern times, the *Spirit of Inquiry*, to unlock the wonders of one half of the world. To the present generation not a corner of our planet is concealed. The human mind roams, unhindered, from pole to pole, without fear of

straying, and with the Lamp of Science penetrates into the most remote countries, transports itself among the most distant people. This faculty gives us a great advantage over the ancients. From its exercise arises a source of manyfold gratification, a gratification most beneficial, when we employ it to escape the sorrow arising from external circumstances and occurrences, or to forget all intercourse with men who are irksome or odious to us, among whom, however, we are obliged to live. Then, if the foreign object which we contemplate, appears to us in fairer colors and outlines, if the scenery is more enchanting, and men happier, we rejoice thereat without envy; if we behold the reverse, however, it reconciles us with the spot upon which we dwell, and in the sorrows of our distant brethern we find consolation and strength to bear our own the more lightly.

It is in this fact that the chief reason is to be found, why descriptions of *foreign* countries and people excite so general and yet so very peculiar an interest. This would be still more vivid, were it always in the power of words to portray men and nature with perfect fidelity, and with that freshness of coloring in which they appear to the mental and bodily eye. But what man is such a master of language that he can claim the ability to describe perfectly the majesty of the Ocean, the sublimity of the Alps, or the splendor of flame-vomiting Etna? Who could think himself equal to depict the wonders of vegetation in the tropics, or the beauty of the rivers and dales in Greece and Italy? In vain does the describer call *Art* to his aid, and, when words are insufficient points to a *picture*. Still he but places shadows by the side of shadows.

A walk along the *Niagara* to its *Falls*, "that wild billowy Titan of America," displays to us one of those pictures of Nature, which language is incompetent to enclose in a fitting frame. Imagine a river, as broad as the Hellespont, and as blue as the sky, flowing through the midst of dense forests; imagine all the wonderful gradations of light and gloom, which fall from the gigantic trees, that cast their shadows along the shore. Here we see mighty willows, prostrate from age, bathing their grey tops in the flood; there, tall plane-trees, mirrored in the waves, from whose branches creeping vines droop caressingly to the stream; here stand, in groups, the Canadian fig tree; there, in long rows, the Virginia poplar; yonder moss grown pines, robbed of their tops by time and tempest, look down sadly from the black precipice upon the dark rushing waters of the depth below. Now a stream, breaking forth from the gloom of a tall and glorious wood, wooes, in grave earnestness, the waves of the majestic Niagara; then a brook, in youthful frolic, leaps from the lofty precipice, a mad cascade, into its broad arms, hiding their union in a veil of spray. Here the shores recede, there they gracefully advance; now the bed of the river grows broader, now narrower; at one place naked rocks over-

hang the flood on which the foliage of shrubs casts its shadow, at another, the tops of huge trees dive into the watery abyss. The tinkling bells of grazing herds, the barking of dogs, or the echo of the destroying axe, now and then remind the wanderer of the neighbourhood of human beings. The solitary hunter, the flying roe and the timid deer, which, at times, he meets; the eagle, which, soaring high above the waters, watches for its prey, or having seized it, devours it upon a rocky pinnacle,—are objects far from being disturbing accessories in this picture of silence and repose, or from lessening the enjoyment of the solitude.—Amid highly cultivated landscapes imagination labors in vain to soar to a lofty pitch. *Civilization* which it meets on every side, weighs, as it were, like lead upon its wings. But in those still fresh and primeval spots the soul can bathe in the ocean of forests, rock upon the waves of the streams, and blend with nature in unfettered freedom.

Imagine a traveller wrapped in such feelings, when suddenly he hears a strange, hollow murmur, an awful tone, like far distant thunder, now returning, now ceasing. With beating heart he stops and listens, until suddenly, upon the wings of the breeze, borne from solitude to solitude, the solemn roar of "*The Falls*" breaks upon his ear. It announces the end of his journey, toward which he speeds with winged feet.

That the reader may clearly comprehend the nature and causes of this grand spectacle, I will endeavour to describe the topographical features, to which it owes its existence.

The Interior of America north of the source of the Mississippi, is an elevated plain, from which flow countless rivers. Those which run eastward, collect themselves in and around Canada in five broad basins, and form the largest lakes of the western Continent:—Lake Superior, Huron, Michigan, Erie and Ontario. They are connected with each other by the descending river, which, as it emerges from lake Ontario, takes the name of the St. Lawrence, whose waves, for a distance of more than seven hundred miles, roll majestically towards the Atlantic ocean. The *channel* that connects Lake Erie with Lake Ontario, (the latter lies about three hundred and fifty feet lower, than the former), is called the *Niagara*. The neck of land between the two is a mountain-ridge, which, at first, inclines gently to the plain, but terminates in a rocky perpendicular wall from two to three hundred feet in height. Through this dam has the Niagara forced a passage, and its plunge over the wall into the plain below, in a width nearly four thousand feet, forms, about fifteen miles from Fort Niagara, the most magnificent of all Cataracts in the known world.*

* It is perfectly clear to the eye of the geologist that the Niagara Falls have backed up all the way from Lake Ontario. The rocks are beds of sandstone, cracked in every direction. "The Falls" must gradually [in the course of some thousands of years] recede to Lake Erie and disappear.

About a mile above the Falls the bed of the river inclines to such a degree, that, looking up the stream, the spectator seems to behold a mountain of water, which, with indescribable rapidity and force, urges its hundred thousand waves towards the yawning mouth of a deep abyss. But before reaching its verge, its waters are scattered in white spray, apparently as dense and lustrous as crystal. The water is divided into two falls, of unequal width, by a black, rocky island, which, threatening to plunge down the precipice, bends its broad, wood-crowned head far over the billowy chaos.

For a long while this island was thought to be inaccessible; but an attempt made many years ago to rescue some shipwrecked Indians, who had clambered upon the rock, and seemed destined to perish by starvation, led to the discovery that, on one side, the stream could be passed, and after indescribable labor, the garrison of Fort Niagara succeeded in driving iron posts into the rocky bed, from shore to shore, upon which a bridge was laid, and by this means they attained the object of their humane efforts. Afterwards this bridge was firmly secured, and it is now crossed without danger by those who wish to view the magnificent and fearful spectacle of the battling waves, from the height of a *tower*, erected in their very midst, upon the verge of the principal fall (Horse-Shoe Falls). Formerly dizzy stairs led down from the brow of the rock to a vaulted cavern, over which the waters plunge in a wide arch. A few years ago, however, the force of the flood tore away this portion of the island (Table-Rock), and hurled it down into the abyss.

The mass of water which falls on the American side, arches itself like an enormous bow, at the instant when it thunders over the verge of the precipice, and then rolls downward like an avalanche, gleaming in the sunlight, with all the colors of the rainbow. The British Falls upon the Canadian side, by far the largest, descend perpendicularly into the chasm. For miles around the earth trembles with the recoil of the mighty torrent upon the bottom of the deep, whence it is hurled aloft in whirlpools of foam, which, soaring above the woods, resemble at a distance, pillars of smoke, as from burning cities. The wall of this glorious cataract is studded with gray rocky pinnacles which look forth from beneath the white veil of waves like fearful spectres, and with each moment seem to change their shape. Above and below the falls the banks are overgrown with hickory-trees and pines, robbed of their tops by age and storm, while on the right shore, stretching far into the land, stands the tall and majestic forest. Eagles and vultures, in search of prey, hover over the abyss, into which the billowy vortex draws, with irresistible might, every thing that ventures within its reach. At all seasons of the year the waves cast upon the shore, below the falls, numbers of dead deer, which have endeavored to

swim the river above, but to weak to withstand the current, have been hurled down the precipice.*

The desire to see Nature's grandest scenery in the new world, now leads annually more than a hundred thousand travellers to the Niagara. Towns and villages are springing up in the vicinity of the falls, while splendid hotels, furnished with every convenience, afford all the luxuries of civilized life. Turnpike roads and railways traverse a landscape, where forty years ago the guidance of an Indian was necessary through the trackless wilderness. The heigths on both sides of the river are studded with the elegant country-seats and mansions of the opulent. On the American side a town is laid out, which promises to grow up to a splendid city, having for its environs a park, the grandeur of which defies all description.

NEW ORLEANS AND ST. LOUIS RAILROAD.

Since the matter for our present issue was put in type, we have received the following dispatch from Col. B. H. Payne, the enterprising and efficient agent of the Opelousas Railroad Company:

New Orleans, 23th June, 1852

Messrs. Tarver & Cobb.

City voted one and a half millions to Opelousas road by twenty-nine hundred and thirty-eight to four hundred and ninety. Let St. Louis be represented at Little Rock, on the Fourth of July. I shall be there for our road.

B. H. Payne.

The vote of New Orleans may be regarded as having secured the building of a railroad from that city to the Northern boundary of La. A similar effort, on the part of Missouri and Arkansas, will secure the accomplishment of the entire route to St. Louis, in less than five years from this date.

* I advise all people going to Niagara to suspend making a note in their Journal till the last day of their visit. You might as well teach a child the magnitude of the heavens by pointing to the sky with your finger as comprehend Niagara in a day. It has to create its own mighty place in your mind. You have no comparison through which it can enter. It is too vast. The imagination shrinks from it. It rolls in gradually, thunder upon thunder, and plunge upon plunge; and the mind labors with it to an exhaustion, such as is created only by the extremest intellectual effort. I have seen men sit and stare upon it in a cool day of autumn, with the perspiration standing on their fore-heads in large beads, from the unconscious but toilsome agony of its conception. After haunting its precipices, and looking on its solemn waters for days, sleeping with its howling monotony in your ears, dreaming and returning to it till it has grown the *one* object' as it will, of your perpetual thought, you feel, all at once, like one who has compassed the span of some almighty problem. It has stretched itself within you Your capacity has attained the gigantic standard, and you feel an elevation and breadth of nature, that could measure girth and stature of a seraph.—*Willis.*

ADVERTISING DEPARTMENT.

Stationery.

F. SCHUSTER & CO.—Stock of German, English, French, &c. Books, Engravings, Blank Books, Music Paper and Stationery, No. 38 Walnut street, corner of Second street, St. Louis, Mo.
August, 1851.

Trunks.

M. PENDZINSKI, Premium Trunk Maker. Constantly on hand, at wholesale and retail, and made to order at the shortest notice, Hard Leather Trunks, Solid Leather Steel Spring Trunks, Valises, Carpet Bags, Packing Trunks, Ladies' Dress Boxes, &c.

Trunks repaired in the best manner. Call and examine for yourselves before buying elsewhere, as I am determined to sell as low as any house in the trade, at all risks, No. 42 North Second street [Westside,] between Chestnut and Pine streets, May, 1851.

A. B. LATHROP. J. W. MITCHELL.
L. G. JEGFERS.
A. B. LATHROP & Co.

MANUFACTURERS and wholesale and retail dealers in TRUNKS, Valises, Carpet Bags, Umbrellas, Ladies' Satchels, Dress and Bonnet Boxes, &c.

☞Constantly on hand at *Eastern Prices* (for CASH,) the largest assortment of Packing Trunks, Canvas or Leather, suitable for packing Prints, Clothing or Fancy Articles, Boots and Shoes, &c. Also—Manufacturers of all kinds of Packing Boxes for the city trade. Depot and Office No. 60 Third street, at the "Trunk Emporium" opposite Old Theatre, St. Louis, Mo. April, 1851.

Architects.

BEN. SMITH, Surveyor and Engineer. Surveys made with accuracy and despatch in any part of the city or country; also, Maps constructed, and Plans and Estimates made for Rail, Plank and other roads. Orders respectfully solicited. Office: North-west corner Third and Chestnut streets, St. Louis.
May, 1851.

Flowers.

FLORA GARDEN.—This establishment contains a collection of Plants and Flowers not excelled perhaps by any in the United States. Of ROSES alone there are 230 varieties; and the proprietor has devoted ten years to storing his HOT-HOUSES, 420 feet in length, with specimens of rare and beautiful plants, and flowers from almost every part of the globe. The Garden is pleasantly situated on South Seventh street and affords a delightful retreat from the noise and dust of the city. A commodious SALOON has been fitted up and will be supplied with confectionary, ice creams, and other refreshments suitable to the season and the place. Spirituous liquors are excluded from the premises. Boquets of the richest flowers and most tasteful combination furnished throughout every season of the year.
April, 1851. G. GOEBEL.

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J. BLATTNER, Mathematical and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 58 North Second street, between Pine and Olive, St. Louis, Mo., manufactures, and has always on hand: Surveyor's Compasses, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, hydrometers for acids and salts, Magic Lanterns, Electrical Machines, &c., also, Surgical and Dental Instruments; Pocket, Dissecting, Cupping and self-injecting cases; Taylor's Shears, all sizes; Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; large Scales and Weights for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols. Powder Flaks, Game Bags, &c. ☞All the above Instruments repaired at short notice in the best manner.

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WILSON & BROTHERS, Wholesale Dealers in Hardware, corner of Main and Olive streets, St. Louis, Mo.

P. WONDERLY, Manufacturer of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains. Copper ettles, Well and Cistern Pumps, and every other article in his line of business, No. 233 Main street, South-east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

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WM. M. HARLOW, proprietor of the St. Louis Furniture Store, manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

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LEFFINGWELL & ELLIOT, Real Estate Dealers, Auctioneers and Conveyancers, No. 123 Chestnut street, St. Louis, Mo. Real Estate sold on commission, at private sale, or auction. Also, deeds of all kinds written, and acknowledgments taken. Maps of the city and additions to be seen at the office, and information given free of charge. Surveying done promptly and correctly.

GENERAL AGENCY at Dubuque, Iowa, for public lands, real estate, military land warrants, payment of taxes, investigation of titles, amicable collection of debts, and all other business within the legitimate sphere of an Agent's duties, by

CHARLES CORKERY,

Notary Public and Commissioner of Deeds and Depositions for all the North-western States, Missouri included. October, 18 1.

Attorneys.

GLOVER & CAMPBELL, late of Palmyra, Mo., Attorneys at Law, St. Louis, Mo.

JOHN LOUGHBOROUGH, Attorney and Counsellor at Law, office No. 56 Pine street, near Third, (adjoining that of the Clerk of the Supreme Court.

F. HEREFORD, Attorney at Law, Independence, Mo. Office over Thomas & Todd's store.

Refer to Messrs. Thomas & Todd, Smart & Hughes, Coleman & Dallam, Independence, Mo.; Hon. Wm. Scott, Hon. Thos. L. Price, George W. Hough, Jefferson City, Mo.; Tutt & Watson, M. Tarver, Esq., H. Cobb, Esq., St. Louis, Mo.

T. N. WAUL, Lawyer, No. 87 Gravier str.' New Orleans, La.

Refer to Magee, Ulhorn & Co.; Lesesne & Moise; Benoist, Shaw & Co.; A. J. Denistoun; S. J. Nicholson; Hill, McLean & Co.; M. D. Cooper & Co.; Lowe, Pattison & Co.; McRae, Coffman & Co.; Cockran, Bullard & Co.; C. C. Lathrop.

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Recorder of New Madrid Co., Mo.
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THE

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AND

Civilian.

M. TARVER & H. COBB, Editors and Proprietors.

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MEYER'S UNIVERSUM.—We have heretofore noticed *Meyer's Universum*—a German work of rare literary and artistic elegance, and expressed a disposition to translate a portion of it for the Journal. Now we find, Part I of Vol. I of an English American Edition has been issued by that ripe scholar, CHARLES A. DANA. As the work can speak for itself better than we can for it, we publish one of its articles descriptive of that sublime American scene, "Niagara Falls," and commend to all lovers of belles lettres and fine engravings the original at Mr. Witter's, cor. of 2d and Walnut streets, the agent who has favored us with the above.

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☞ Owing to the enlargement of the work, six numbers will hereafter constitute a volume, and a general Index will be made out to accompany the 6th and 12th numbers.

☞ Publishers of Newspapers who will insert the foregoing prospectus in their papers, once in three months, will be furnished with the work for one year.

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VOL. VIII. AUGUST, 1852. NO. 5.

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ARTICLE I.

Relation between Ignorance and Crime.

Recurring to the leading objects which in the beginning we proposed to advocate, and desired to promote by our labors as journalists, we find that, although in many respects we have cause to feel encouraged, yet, much of our work remains to be accomplished.

The varied wants which continually press upon the human mind demanding immediate relief, compel men to adopt *expedients*, and prevent the undertaking of comprehensive schemes of social improvement. Unaccustomed to contemplate measures whose fruits are not to be realized, perhaps, during their own term of existence, men are not prepared to appreciate the arguments of those whose plans are designed chiefly to benefit another generation; and, consequently, one who would bring them to act upon such schemes, must present his subject in a variety of lights, and while he addresses the public mind with the ardor of an enthusiast, must wait for its conviction with the patience of a philosopher. This we have learned from experience.

Profoundly impressed with the importance of a system of common school education, calculated to insure a reasonable degree of instruction to every white child born or raised in the State, we entered upon the discussion of this subject in the first volume of the Western Journal, and although several able writers have generously come up to our assistance in this important work, yet, we are compelled to record the fact that our system, if such it may

be called, remains unchanged and totally incapable of producing the results contemplated by the framers of our constitution. That instrument declares that "schools and the means of education shall forever be encouraged in this State." Here is an injunction binding upon the conscience of every individual who takes his seat as a member of the General Assembly, and we hold that every one who serves as a member of that body, is bound by his oath to satisfy himself whether such encouragement has been given to "schools and the means of education," as the reasonable wants of the people require. The framers of the constitution did not limit the degree of encouragement nor prescribe a system of education, but no well enlightened mind can escape the conviction that such encouragement was contemplated as would at least be sufficient to enable every individual, possessing a sound intellect, to read the Bible and the laws of his State. And if it should be found that the means heretofore appropriated to the purposes of education do not insure these ends, then we contend that it is the duty of the Legislator to advocate a system which will accomplish them in a reasonable period; and, should he neglect his duty in this respect, *he must stand accountable for the evils which flow from the ignorance of his constituents.* A glance at the nature of our institutions will show the reasonableness of these conclusions.

The Government of Missouri is a Representative Democracy, where every white man, whether born in the State or not, may become a citizen eligible to a seat in the Legislature. Now, we shall not undertake to show what proportion of the people must be educated to sustain our democratic institutions, but we may safely affirm that universal education is necessary to secure the full enjoyment of the benefits which such institutions were designed to impart. The ignorant are naturally distrustful of men who possess high attainments, and their sympathies inclining them to follow those who are but little above their own standard, they are ever liable to be led astray by designing demagogues; and hence, in the practical operations of our government, their crude opinions and prejudices are brought to bear against and overrule the wisdom of those who possess the highest degree of intelligence and patriotism. It was to guard against this and other evils springing from ignorance, that the framers of the constitution declared that schools and the means of education should forever be encouraged.

Indeed, it may be affirmed that a democratic government cannot

exist long without a general diffusion of a degree of intelligence, which will enable its constituents to comprehend and appreciate the great principles of political and civil economy. For, unless the masses be educated, ignorance and vice must rule over intelligence and virtue, a state of things inconsistent with the laws of Deity, who hath ordained that intelligence should govern the Universe.

We hear much said of progress. Let us look to it, that we do not move in the wrong direction. We admonish the friends of progress, that the road to the Schoolhouse is the only road that leads to permanent improvement in the science of government, to wealth and social happiness. Open this wide, make it free to all, both rich and poor, and, if necessary, compel them to enter, for our institutions are not safe, while ignorance stalks abroad in the land, votes at the polls, and legislates for the people. Besides, by advancing the cause of education, we shall strengthen the minds of men against the temptations of those vices leading to the commission of crimes, and, consequently, render the person and property of individuals more secure against the aggressions of evil doers.

We are not to be understood as affirming that the uneducated are necessarily grossly vicious or dishonest; but in the present state of society, poverty is an evil almost inseparable from ignorance. 'Hewers of wood and drawers of water,' destitute of the appliances necessary to the enjoyment of a reasonable degree of comfort, cut off from the companionship and sympathies of the more intelligent portion of their race, uninstructed in the great principles of moral obligations and social duties, and below the reach of public opinion, which controls the actions of men of feeble minds in a higher condition, it would be irrational to expect the uneducated to be strict observers of the laws which protect others in the enjoyment of wealth and the pleasures which flow from an educated mind. And though it may be necessary to punish individuals of this unfortunate class for offences against the community, yet, the intelligent mind traces the cause of the crime to a neglect of duty on the part of the State, and deprecates the injustice of the punishment, while it admits the necessity. To show the connection of ignorance and crime, and the efficacy of education to restrain men from transgressing the laws, we copy the following facts and statistics from a late number of 'Hine's Progress Pamphlets,' a work which we cordially recommend to public patronage.

STATISTICS SHOWING THE REIGN OF IGNORANCE AMONG THE CRIMINALS OF THE WORLD.

In 1846, the number received into the Jails and Houses of Correction in Massachusetts, was 6,544, of whom 953 were debtors. Of these, 4,381 were unable to read and write. It is probable that most of the debtors could read and write, so that the proportion among the really criminal who are thus ignorant, is still greater. Suppose 700 of the debtors could read and write, and 253 could not, we must deduct them from the aggregate, because it is too late in the day to call a debtor a criminal. We shall thus have 1,716 who could read and write, and 4,128 who could not—or nearly one of the former to two and a half of the latter. In 1847, the number in the Jails and Houses of Correction of Massachusetts, was 7,009, of whom 1,060 were debtors. Of these, 3,270 were able to read and write. Suppose 800 of the debtors could read and write, there would then be 1,570 able to read and write, and 5,179 of the criminals who could not read and write—being nearly one of the educated to three and a half of the ignorant. In 1840, the number in Massachusetts who could read and write, was 403,761—unable do. 4,448—a little over 1 to 100. Were not ignorance the cause of crime, there ought to have been only 58 in the Jails and Houses of Correction who could not read and write, instead of 4,128; and in 1847, there ought to have been only 68 instead of 5,179. We have in these cases from 5,000 to 7,500 per cent. in favor of Education as a preventive of crime.

Of the 9,979 committed to the Jails and Houses of Correction in Massachusetts in 1850, only 3,175, or less than one-third, could read and write—and that too, while only one in an hundred of the people could not read and write, making about 10,000 per cent. in favor of Education!

In the Ohio Penitentiary, in 1847, there were 445 convicts, of whom 297 were reported able to read and write. Of the 297, about 100 were taught in the prison, so that really 248 of the whole number are from the class of total ignorance. In 1840, the number of the population of Ohio who could read and write, was 638,649—could not do. 35,394, being 1 to 21—that is, there ought to have been twenty-one times as many among the convicts who could read and write, as could not. Here we have 2,100 per cent. in favor of Education.

In 1843, of 1778 convicts in the Eastern (Pa.) Penitentiary, 906 could not read and write. The population of Pennsylvania, in 1840, who could read and write, was 765,917, and the number that could not read and write, was 35,394—being 1 to 21 of the former, while more than half the convicts mentioned above were from the latter. Were not education effectual in staying the hand of crime, 1690 should have been able to read and write, and only 88 without this ability. Here we have nearly 2,000 per cent. in favor of Education. The whole number of convicts received in the Eastern Penitentiary of Pennsylvania, from the first up to 1844, was 1,916. Of these, 945 could read and write, 447 could read only, and 524 could not read and write.

In 1844, there were in the Auburn Prison 778 convicts of whom 164 are reported unable to read; how many more could not write, is not stated. In 1845, the number was 683, of whom 131 could not

read. Of the 1,653 sent to that prison up to that time, the following was reported as their educational standing:

Of Collegiate Education	7
Of Academical Education	14
Could read, write and cipher	482
Could read and write only	400
Could read only	380
Could not read the Bible	373
Whole number	1,653
Could not cipher	1,171

What a commentary is this upon ignorance?—Showing that nearly all are from the ranks of the uneducated. In view of these facts the Inspectors say:—"These statistics present facts showing the connection of ignorance and crime, that should prompt every philanthropist to renewed efforts to multiply the facilities to properly educate and discipline every youthful member of our wide spread population." And yet it seems that the people will not believe, though one rise from the dead to tell the terrible truth.

In 1846 the number in this prison was 606, of whom 112 could not read, 9 had an Academical and 3 a Collegiate Education.*

In 1847 the number was 504, of whom 79 could not read, and 9 had pursued Academical studies.

In 1849 there were 452 convicts, of whose Education the following is reported:

Unable to read	170
Learned to read in Prison	105
Could read and write, and knew something of Arithmetic	247
Had good English Education	31
Had Classical Education	4
Had had Religious Instruction	239
Had had no Religious Instruction	213

In 1849 the number was 609, distributed as follows:

Unable to read	126
Could read indifferently	87
Could read, write and cipher	360
Had good Education	30
Had Classical Education	6

Of the 1,121 convicted in the Courts of Record in New York, in 1850, the following:

Could read and write	687
Could read only	86
Could not read or write	215

In the cities of Albany, Brooklin, Buffalo, New York, Schenectady, and Troy, 3,167 were convicted at the Courts of Special Sessions in 1850, of whom the following:

Could read and write	1,746
Could read only	240
Could not read and write	1,003

The number of commitments to the Prisons of New York city in 1850 was 21,299, of whom:

Could not read	9,449
Could read only	1,646
Could read and write	7,284
Well Educated	2,737
Classically Educated	25
Unknown	164

* With regard to those Educated convicts, a word will be said further along.

In view of such facts, the Warden of the Ohio Penitentiary, in a special report on Prison Discipline, made in 1851, said:

"When it is considered that a very fruitful cause of crime is early orphanage, poverty, and ignorance, the importance of Penitentiary schoolmasters will be rendered at once apparent. In no other way than by giving them the rudiments of a common English Education, can we hope that convicts, when discharged, will attain to any considerable degree of usefulness or virtue. Intellectual and moral culture are co-workers together for the reformation and elevation of man."

During 1847 and 1848, 335 were received into the convict department of the Philadelphia County Prison, of whom one hundred and twenty-six could neither read nor write; ninety could "read a little;" one hundred and sixteen could read and write imperfectly; and three were well educated. Of twenty-one persons under conviction of riot, in the County Prison, on the 19th December, 1849, eight could not read; three could read, but not write; seven could read and write, but knew nothing of arithmetic; and three could read, write, and cipher. No one of them had a good elementary education. Of 237 boys over 13 years of age, received into the White Department of the Refuge, between January 1st, 1847, and December 17th, 1849, 42 could read well; 153 could "read a little," and 42 could not read at all. The Clerk of the Sessions says that a large majority of the persons held to bail in the Court for riot, and other offences involving a breach of the peace, are "destitute of Education, being unable to write their names to the bail bond." Messrs. Wharton, Webster and Reed, who have in turn prosecuted the pleas of the commonwealth in this county for the last five years, agree that, with few exceptions, this class of offenders are "almost utterly uneducated."

It is proper to remark here, that an ability merely to read, is of little service in a moral point of view. Indeed, we might say the same of the ability merely to read and write; for an effectual Education must go to the thoughts and feelings of the individual—it must give him the complete command of himself, enable him to comprehend the true object of life, and understand the momentous import of his existence. Viewed in this light, we shall not find even a small per cent. of educated criminals in our Jails and Penitentiaries. The ability to read and write is of little service in morals, unless that ability be exercised; and we shall find it not a singular fact, that of all the convicts who can read and write, but the smallest appreciable number have used the acquirement as a channel for information and improvement. This being the case, they are as if they could not read and write, and all should be included among the totally ignorant. The Warden of the Eastern Penitentiary says that not one in twenty of the convicts "can write a fair and connected letter." The Board of Prison Inspectors reported that only one out of four could write more than merely their own names!

If we turn to the old world we shall find our pathway full of facts enforcing the doctrine which we now announce, that a true Education —such as every one is entitled to by the rights of his existence—will banish crime from the earth. France furnishes the following:

TABLE

Showing the state of Education among the Criminals of France.

UNABLE TO READ OR WRITE.					
Year.	Crimes against the person.	Crimes against property.	Total.	No. Acquitted.	No. Convicted
1828	1,009	3,157	4,166	1,589	2,627
1829	1,063	3,460	4,523	1,696	2,827
1830	990	3,329	4,319	1,654	2,665
1831	1,144	3,456	4,600	1,948	2,652
1832	1,833	3,416	4,749	1,883	2,856
	5,539	16,818	22,357	8,720	13,637

ABLE TO READ IMPERFECTLY.					
Year.	Crimes against the person.	Crimes against property.	Total.	No. Acquitted.	No. Convicted.
1828	505	1,353	1,858	715	1,143
1829	496	1,451	1,947	787	1,160
1830	465	1,361	1,826	776	1,060
1831	568	1,479	2,047	1,000	1,047
1832	150	1,606	2,456	1,162	1,294
	2,884	7,250	10,134	4,430	5,704

ABLE TO READ AND WRITE WELL.					
Year.	Crimes against the person.	Crimes against property.	Total.	No. Acquitted.	No. Convicted.
1828	215	566	780	342	438
1829	185	544	729	325	404
1830	174	514	688	330	358
1831	234	533	767	428	341
1832	292	483	775	373	402
	1,100	2,639	3,739	1,796	1,943

RESPECTABLY EDUCATED.					
Year.	Crimes against the person.	Crimes against property.	Total.	No. Acquitted.	No. Convicted.
1828	36	82	118	77	41
1829	46	124	170	89	81
1830	37	92	129	82	47
1831	98	92	190	132	58
1832	169	88	257	162	95
	386	478	864	542	322

From this table, we find the crimes distributed among various classes as follows:

Unable to read or write	22,357
Able to read imperfectly	10,134
Total of Ignorance	32,491
Able to read and write well	3,739
Respectably educated	864
Total of Education	4,603

These are the aggregates of crimes charged against individuals. Those proved, or the number convicted, are as follows:

Unable to read or write	13,637
Able to read imperfectly	5,774
Total of Ignorance	19,341
Able to read and write well	1,913
Respectably Educated	322
Total of Education	2,265

Of the crimes charged, we find the proportion between Ignorance and Education, as 8 to 1; and of crimes convicted, as 8½ to 1. The population of France was 32,561,563, and the proportion who could read and write, was, to those without this ability, as 38 to 90. In these facts we have about 700 per cent. in favor of Education. In-

deed, this would be a much greater per cent. if we could deduct from the class of ignorance, the children who cannot read, and are not upon the criminal lists.

If we cross the channel into Great Britain, we shall find the facts equally gratifying. In the reports of the Prison Discipline Society, we find that Rev. James Brown, chaplain of Norwich Castle, Norfolk, England, says that, "from January, 1825, to March, 1826, 400 prisoners came under my examination; of these, 183 could neither read nor write, 28 merely knew the alphabet; 49 could read very imperfectly, so as not to be able to obtain any information by it; 51 could read only; and 99 could read and write." He also states, that "among those who have learned to read and write, there exists a lamentable ignorance of moral and religious duties."

In Porter's work on the Progress of the British Empire, we find the following facts:

In twenty counties of England and Wales, with a population of 8,724,338 persons, there were only 59 instructed convicts for 1840; while in the 32 remaining counties there was but one instructed convict—that is, who had received more than the rudest elements of instruction. Middlesex, the Metropolitan county, with 1,576,616 inhabitants, did not furnish an educated convict. Among the 59 mentioned above, 15 were political offenders.

In 1841, fifteen English counties furnished 17 instructed convicts out of a population of 9,569,064; while the remaining counties of England and the whole of Wales, did not furnish one convict out of a population of 6,342,661 who had received more than the mere elements of instruction. It must be remembered, to the credit of Education, that out of the 109 accused persons who had been educated, but one was a female; while among the uneducated convicts one-fourth are females.

The following are the criminal returns for England and Wales, from 1836 to 1841:

1. *Neither read nor write.*

	Males.	Females.
1836	5,598	1,435
1837	6,684	1,780
1838	6,342	1,601
1839	6,487	1,709
1840	7,145	1,913
1841	7,312	1,908

2. *Persons who could read only, or read and write imperfectly.*

	Males.	Females.
1836	8,968	2,015
1837	10,147	2,151
1838	10,008	2,826
1839	10,523	2,548
1840	12,151	2,958
1841	12,742	2,990

3. *Persons who could read and write well.*

	Males.	Femoles.
1836	2,016	199
1837	2,057	177
1838	2,051	206
1839	2,201	261
1840	2,038	215
1841	1,839	214

4. *Persons who received instruction beyond the elementary branches of reading and writing.*

	Males.	Females.
1836	176	16
1837	98	3
1838	74	5
1839	74	4
1840	100	1
1841	126	

The number for 1841—126—was found afterward to be only 109. Besides these, about 500 per year of males, and 100 of females, were undetermined as to Education.

In England, in 1841, the offenders were to the population as 1 to 573, while in Scotland they were as 1 to 742; the difference being due to superior Education in Scotland.

To complete the record for England, let the following table be given:*

Degrees of Instruction.	1842.	1843.	1844.	1845.	1846.	1847.	1848.
Unable to read	32,35	31,00	29,77	30,61	50,66	31,59	31,93
Read Imperfectly	58.32	57,60	59,28	58,43	59,51	58,57	56.38
Well Educated	6,77	8,02	8,12	8,38	7,71	7,79	9,83
Superior Education	0,22	0.47	0,42	0,37	0,34	0,28	0,27
Not ascertained	2,34	2,91	2,41	2,30	1,78	1,60	1,59

From this table we notice that an average of 88 per cent. of all the criminals of England were among the uneducated! Reading imperfectly is equivalent to no Education, and accordingly, the first two classes are included among the uneducated. It is noticed also that an average of only about 8 per cent. were well Educated, while but a third per cent. possessed a superior Education! Let these facts tell in favor of the greatest of all the agencies for human improvement. About two-thirds of the males of England are "well Educated," as it is called; and yet 88 per cent. of criminals are from the 33 per cent. of uneducated population—about 2,000 per cent. in favor of Education!

In Porter's work, we find the following satisfactory statement in relation to the regenerating power of Education:

"In the island of Iceland, there is no such thing to be found as a man or woman—not decidedly deficient in mental capacity—who cannot read and write well, while the greater part of all classes of the inhabitants have mastered several of the higher branches of education, including a knowledge of modern languages and an acquaintance with classical literature."

Being at the verge of the Arctic circle, but few hours of the day can be devoted to labor out-doors.

"Every account of this people that has been published, agrees in describing them as gentle and peaceable in their dispositions; sober, moral, and religious in their habits. Crimes among them are hardly known. The house of correction at Reickiavich, the capital of the island, after having stood empty for years, was at length converted into a residence for the Governor, by whom it has since been occupied. The island is subject to the penal code of Denmark, which awards the penalty of death to murder and some other heinous offences. It is said that only three or four capital convictions have occurred during the last two centuries; the last of these happened some years before the visit of Sir G. Mackenzie, and Dr. Holland, in 1810, it was of a peasant for the murder of his wife, and on that occasion it was not possible to find any one on the island who could be in-

* Blackwood, Nov., 1849.

duced to perform the office of executioner, so that it became necessary to send the man to Norway, that the sentence might be carried into effect."

During the nine centuries that have elapsed since the first settlement of the island, no armed force has been raised or introduced into the island.

We extract the following interesting particulars from Mr. Frederick Hill's eleventh report on the Prisons of Scotland, presented to Parliament in 1848:

"Of about 18,000 prisoners received during the year ending 30th June, 1845, rather more than 2,600 were under seventeen years of age; nearly 3,700 were between seventeen and twenty-one years of age; nearly 11,000 from twenty-one to fifty; and about 11,100 above fifty.

"As a general rule, the prisoners, especially the young, are found on admission to be inferior, both in mental and physical development, and in the amount of knowledge they have acquired, to people generally; owing, no doubt, to the unfavorable circumstance of their birth and early training, and to frequent exposure to cold and want, often alternating, as the age advances, with the effects of dissipation. Many who are committed and liberated while young, probably die before they reach manhood; but the same general inferiority is observable, to a greater or less extent, in prisoners of all ages. In many cases, indeed, the degrees of weak-mindedness and the want of self-control approach the confines, and even pass the boundary of sanity; and a lunatic asylum would often be a more appropriate receptacle than a prison.

"The records of the state of the education of the prisoners, on their admission, as shown by their knowledge of reading and writing, agree with what might be expected under such circumstances. Of upward of 15,000 prisoners examined last year, only 1,003, or one in fifteen, were found able to read and write well; and only 262, or one in sixty, knew more than mere reading and writing; while upward of 3,000 could not read at all, and upward of 8,000 could not write at all.

"It will be found, by a comparison of the foregoing summary with that given by Mr. Redgrave, in the criminal returns from England and Wales, that, although the general state of education in Scotland is usually considered to be superior to that of England, the criminal population of Scotland is quite as low in education as the criminal population of England and Wales; showing clearly, that in Scotland, as well as in England, it is among the uneducated that crime abounds, potent as may be other causes than the want of education in producing crime."

We respectfully request our readers to re-peruse and carefully consider the foregoing facts. They are full of instruction touching a subject in which the interest of every individual in the community is deeply involved. From a comparison of the statistics of crime in the United States and Great Britain, it appears that about three fourths of the unfortunate delinquents belong to that class who are totally uneducated, or whose education has been so limited as to be of but little or no advantage to them. We have not the data from which we can make accurate estimates, but are persuaded that it will not cost the community as much to prevent crime and pauperism by a judicious system of public education as to provide for the punishment of delinquents, and the support of paupers. But there are higher arguments in favor of education than those which grow out of calculations of pecuniary gains.

Our government is based upon the intelligence of its constituents; this is a vital element, a property essential to its existence; and, consequently, it is the first and highest duty of the State to

provide not only for the preservation, but full development of that principle which brought it into being, and without which it must cease to exist.

No amount of wealth,—no degree of intelligence or virtue, no calling or station can place an individual above the reach of those evils, which flow from ignorance. Assuming it to be the principal source of crime, as it is proven to be by the foregoing facts, it robs, steals and begs from individuals, while it taxes the community to pay for prosecuting offenders, for the building of jails and poorhouses, and supporting their immates.

It endangers reputation and personal safety, and may be regarded as the chief cause of almost all the mental anxiety and inquietude that afflict the human family.

Surely, the people of Missouri will not long permit these evils to remain, when it is in the power of the State to remove them at a cost which, divided among its constituents, in proportion to their means, would scarcely be felt or perceived by any. We conjure our readers by that object which each cherishes as most dear to his heart and affections, to give not only their approval, but most cordial and active encouragement to the adoption of a system of public schools that will insure a reasonable degree of education to every free white child hereafter to be raised in the State. We call upon the public press, that great medium through which the intelligence of the age is diffused through the land, that engine which fashions public opinion, and directs the legislation of all free goverments, to come forth in support of a better system of education in Missouri than the present. Humanity, the cause of civilization, the best interest, the glory of the State, demand their services in this good cause; and we sincerely hope that the conductors of every public Journal in the State will bring their influence to bear upon the next General Assembly in favor of this vital measure.

And, finally, we invoke the active support and encouragement of the ministers of our holy religion, of every denomination. By the census of 1840, there was one out of every fifteen adults in the State of Missouri, who could not read the scriptures. And assuming that crime bears the same relation to ignorance in this State, that is found to exist in other countries, about three fourths of the offences against the laws are committed by those who cannot read.

In view of a source of so much moral evil in our midst, can the

teachers of religion, with folded arms, look in silence upon the withering and blighting effects of ignorance, and leave the work of reformation as a hopeless cause in the hands of politicians? Surely, they will not; they cannot so grossly misconceive the objects of their mission.

Enlightened in respect to one of the most fruitful causes of crime, we respectfully invite them to make that cause to be understood by those who look up to them for counsel and instruction. It is in their power, would they, with one accord, enter upon the work with earnestness, to bring the moral influence of the people throughout the State to bear upon this subject, compelling their representatives to devise and adopt measures which will secure a reasonable degree of instruction to all who are unable to provide it for themselves.

We suggest no plan ; we are willing to leave that to others; our chief object at present is to prepare the public mind for action. It will require many years to organize a system of common schools, and bring it into successful operation, even after a plan shall have been adopted, and we are persuaded that every philanthropist will agree with us in the opinion, that the beginning should not be longer delayed.

ARTICLE II.

The First Railroad in Missouri.

Messrs. Tarver & Cobb, Editors Western Journal.

Gentlemen :—In this day of progress when this entire country, and particularly the great and growing West, seems to be alive to works of internal improvements ; when plankroads, railroads, and canals are engrossing the public mind, I have thought proper to give your readers the history of the first railroad, now completed in the State of Missouri. During a recent trip up the Missouri river, I stopped at Lexington, now a city of commercial importance, and all a growth of only twelve years. It can now deservedly boast of a splendid college, several elegant female academies, flouring-mills, rope-walks, pork packeries, etc. Besides, it is the great mart of the wheat, hemp and tobacco country. But to return to the railroad. After leaving Lexington, I crossed the river and took the road leading to Richmond. Passing through a beau-

tiful prairie, I came to the residence of James R. Allen, Esq., an old and highly esteemed citizen of Ray county. On my arrival I found him absent from home. While waiting for his return, I amused myself with examining his splendid merchant mill which he has recently erected on his plantation, and for the use of which his railroad was originally projected. I found this establishment one of the best I ever saw, and already it holds a high reputation for manufacturing the very best flour. In a short time, I saw the cars coming up from the river, and on the train sat the "old gentleman himself." He alighted from his railway *carriage*, and greeted me with great cordiality. Night coming on, I spent the evening with him under his hospitable roof. During my short stay with him, he informed me that the *railroad* in question, leading from his mills to the Missouri river, is five miles in length, reaching the river nearly opposite Lexington, with his own negroes and a few hired laborers he has sawed all the materials, graded the road, bridged the sloughs, and, in short, has completely finished his road in the space of two years. In the first place he built a saw mill at the place of beginning, and used the road as fast as it was laid down for the transportation of materials. The whole concern is made of wood. The streamers, cross-ties and rails are all of the best seasoned *native* post oak, which becomes almost impervious to rain and weather, and will answer for many, many years just as good a purpose as iron. This road crosses a miry wretched swamp that lies between Lexington and the Grand River country. It will therefore be of the greatest advantage to the citizens of that vast growing country, in getting their weigthy but valuable products to market, and carrying back their supplies for home consumption. Mr. Allen informed me that his road costs him, including everything, about $1500 a mile. He thinks that railroads of this kind are far cheaper, and in every way better, than plankroads. That great success may attend his noble enterprise, and that his fondest anticipations may be realized, is certainly the wish of every patriotic heart, for he richly deserves it. If, gentlemen, such railway links as these could only bind our western villages, one by one, communication would be increased, travel facilitated, and the heaviest articles of merchandise would be transported for a mere song. Then, and not till then, can you expect a market at every man's door. I am heartily glad as an American citizen to see that our whole country has wakened up to the great importance of "internal improvements." Even my own State, Louisiana, has at last shaken off the *stand-still* policy, and begins to find that unless she enters the lists in real earnest, it will soon be too late. The trade will be diverted to other points, and the golden harvests be reaped by others. The convention now in session, will take a deep interest in this matter, and do all in its power to bring capital to the State, and invest it freely. Already, not only meetings are held, and spirited addresses delivered, but

money, the *L'argent*, subscribed with great liberality. In every direction, from New Orleans, as the great center, to Jackson, Miss., to Opelousas, and even to St. Louis, the people are up and adoing. In conclusion, gentlemen, may I not indulge the hope that in a few short years, you will dine with me, (near Baton Rouge) and on the following evening take your tea and toast with your friends in St. Louis.

Very truly, your ob't. s't., H. W. A.

West Baton Rouge, July 5, 1852.

Article III.

THE GOVERNMENT AND LAWS OF THE DISTRICT OF LOUISIANA, THE TERRITORY OF LOUISIANA, THE TERRITORY OF MISSOURI AND THE STATE OF MISSOURI, SO FAR AS SAID LAWS WERE ENACTED BY CONGRESS OR HAVE BEEN ADJUDICATED UPON BY THE SUPREME COURTS OF MISSOURI AND OF THE UNITED STATES.

On the 30th of April, 1803, the treaty of cession was signed at Paris, and on the 2d and 12th of December following formal delivery was given at New Orleans of the Territory of Louisiana to the Commissioners of the United States.

GOVERNMENT.

On the 26th of March, 1804, an act of Congress was approved by the President which divided said territory by the line of 33 degrees north latitude, the southern portion thereof being called the Territory of New Orleans, and the northern portion the District of Louisiana. The district was attached to the Indiana territory, and the jurisdiction of the Governor and Judges extended over it. They were authorized to legislate; required to hold two courts annually, and empowered to establish inferior courts. The Spanish and French laws were continued. The Governor and the Judges adopted sixteen laws, on the 1st of October following, under the following titles, viz: 1. Crimes and punishments, 2. Justice's Courts, 3. Slaves, 4. Revenue, 5. Militia law, 6. Recorder's offices, 7. Attorneys, 8. Constables, 9. Boatmen, 10. Defalcation, 11. Practice at law, 12. Probate business, 13. Establish a Quarter Sessions Court, 14. Oaths, 15. Sheriffs, 16. Marriages.

LAND LAWS.

On the 26th March, 1804, by the same act which organized the Government, Congress enacted the following clause relative to land titles, viz:

"Sec. 14. That all grants for lands within the territories ceded by the French Republic to the United States, by the treaty of the

30th April, 1803, the title whereof was at the date of the treaty of St. Ildefonzo (1st Oct. 1800) in the crown, government or nation of Spain, and every act and proceeding subsequent thereto of whatsoever nature towards the obtaining any grant, title, or claim to such lands, and under whatsoever authority transacted or pretended, be and the same are hereby declared to be null, void and of no effect in law or equity. *Provided nevertheless*, That any thing in this section contained shall not be censtrued to make null and avoid any bona fide grant made agreeably to the laws, usages and customs of the Spanish government to an actual settler on the land so granted for himself and for his wife and family; or to make null and void any bona fide act or proceeding done by an actual settler agreeably to the laws, usages, and customs of the Spanish government to obtain a grant for the lands actually settled on by the person or persons claiming title thereto, if such settlement in either case was actually made prior to the 20th day of December, 1803. *And provided further*, That such grant shall not secure to the granter or his assigns more than one mile square of land, together with such other and further quantity as heretofore hath been allowed for the wife and family of such actual settler agreeably to the laws, usages and customs of the Spanish government. And that if any citizen of the United States or other person shall make a settlement on any lands belonging to the United States within the limits of Louisiana or shall survey or attempt to survey such lands or to designate boundaries by marking trees or otherwise, such offender shall on conviction thereof in any Court of record of the United States or the territories of the United States forfeit a sum not exceeding one thousand dollars, and suffer imprisonment not exceeding twelve months, and it shall moreover &c"

On the 2d day of March, 1805, an act of Congress was enacted containing the following clauses, viz:

"*Sec.* 1. That any person or persons and the legal representatives of any person or persons who on the 1st day of October, 1800, were resident within the territories ceded by the French republic to the United States by the treaty of the 30th of April, 1803, and who had prior to the said 1st day of October, 1800, obtained from the French or Spanish governments respectively during the time either of the said governments had the actual possession of the said territory any duly registered warrant or order of survey for lands lying within the said territories to which the Indian title had been extinguished, and which were on that day actually inhabited and cultivated by such person or persons or for his or their use, shall be confirmed in their claims to such lands in the same manner as if their titles had been completed. *Provided however*, That no such incomplete title shall be confirmed unless the person in whose name such warrant or order of survey had been granted was at the time of its date either the head of a family or above the age of twenty one years; nor unless the conditions and terms on

which the completion of the grant might depend shall have been fulfilled."

"*Sec.* 2. That to every person or to the legal representative or representatives of every person who being either the head of a family or twenty one years of age had prior to the 20th day of December, 1803, with the permission of the proper Spanish officer, and in conformity with the laws, usages and customs of the Spanish government made an actual settlement on a tract of land within the said territories, not claimed by virtue of the preceding section, or of any Spanish or French grant made and completed before the 1st day of October, 1800, and during the time the government which made such grant had the actual possession of the said territories, and who did on the said 20th of December, 1803, actually inhabit and cultivate the said tract of land; the tract of land thus inhabited and cultivated shall be granted. *Provided however*, That not more than one tract shall be thus granted to any one person, and the same shall not contain more than one mile square, together with such other and further quantity as heretofore has been allowed for the wife and family of such actual settler agreeably to the laws, usages and customs of the Spanish government. *Provided also*, That this donation shall not be made to any person who claims any other tract of land in the said territories by virtue of any French or Spanish grant."

By the 3d section a Recorder of land titles must be appointed by the President. What his powers and duties are, is not stated.

"*Sec.* 4. That every person claiming lands in the above mentioned territories by virtue of any legal French or Spanish grant made and completed before the 1st October, 1800, and during the time the Government which made such grant, had the actual possession of the territories, may, and every person claiming land in the said territories by virtue of the two first sections of this act, or by virtue of any grant or incomplete title bearing date subsequent to the 1st Oct., 1800, shall before the 1st March, 1806, deliver to the (Register of the land office) Recorder of land titles, within whose district the land may be, a notice in writing stating the value and extent of his claims, together with a plat of the tract or tracts claimed; and shall also on or before that day deliver to the said (Register or) Recorder for the purpose of being recorded every grant, order of survey, deed, conveyance or other written evidence of his claim; and the same shall be recorded by the (Register or) Recorder, or by the translator hereinafter mentioned in books to be kept by them for that purpose on receiving from the parties at the rate of 12½ cents for every hundred words contained in such written evidence of their claim. *Provided however*, That where lands are claimed by virtue of a complete French or Spanish grant as aforesaid, it shall not be necessary for the claimant to have any other evidence of his claim recorded, except the original grant or patent together with the warrant or order of survey and the plat;

but all the other conveyances or deeds shall be deposited with the (Register or) Recorder to be by them laid before the Commissioners hereinafter directed to be appointed, when they shall take the claim into consideration. And if such person shall neglect to deliver such notice in writing of his claim together with a plat as aforesaid, or cause to be recorded such written evidence of the same, all his right, so far as the same is derived from the two first sections of this act, shall become void, and forever thereafter be barred; nor shall any incomplete grant, warrant, order of survey, deed of conveyance or other written evidence which shall not be recorded as above directed, ever after be considered or admitted as evidence in any court of the United States against any grant derived from the United States. The said (Register and) Recorder shall commence the duties hereby enjoined on them on or before the 1st day of September next, and continue to discharge the same at such place in their respective districts as the President of the United States shall direct."

By the 5th section, the President is authorized to appoint two commissioners who with the Recorder constitute a Board for adjusting land titles. They were to meet on the 1st December, 1805, and continue their sittings until the 1st March, 1806. They were to examine records and papers, witnesses &c., report to the Secretary of the Treasury by whom the report was to be submitted to Congress to whom was reserved the right to confirm titles. In the performance of their duties it was provided that "when any Spanish or French grant, warrant or order of survey as aforesaid shall be produced to the said Board for lands which were not at the date of such grant, warrant or order of survey, or within one year thereafter inhabited, cultivated or occupied by or for the use of the grantee; or whenever said Board shall not be satisfied that such grant, warrant or order of survey did issue at the time when the same bears date, but that the same is antedated or otherwise fraudulent; the said Commissioners shall not be bound to consider such grant, warrant or order of survey as conclusive evidence of the title, but may require such other proof of its validity as they deem proper."

GOVERNMENT.

On the 3d March, 1805, an act was passed by which the name of the "District of Louisiana" was changed to that of the "Territory of Louisiana." It also provided for a Governor to hold office for three years, and to be appointed by the President. He was also the superintendent of Indian affairs. The Secretary was appointed for four years, and acted in the absence of the Governor as his substitute. The Governor and three territorial Judges constituted the Legislature, and had power to establish inferior courts and enact all laws. The three Judges were appointed for four years, and held two courts in each year at suitable places. The

act took effect on the 4th July, 1805. The office of Attorney General was created on the 6th May, 1806. Originally there were five districts or counties, viz: St. Louis, St. Charles, Ste. Genevieve, Cape Girardeau and New Madrid. In 1806, 1807, 1808, many laws were enacted changing the previous regulations for the acquisition and descent of property.

LAND LAWS.

On the 28th day of February, 1806, an act was approved, by which it was provided "That the powers vested by law in the Surveyor General, shall extend over all the public lands of the United States in the territory of Louisiana, to which the Indian title has been or shall hereafter be extinguished. By this act a principal Deputy was appointed for Louisiana territory who was required to execute "such surveys as may hereafter be authorized by law or as he may be directed to execute by the Commissioners appointed for the purpose of ascertaining the titles and claims to land within the territory aforesaid &c."

This act also provided that the plats of surveys appertaining to the office of Surveyor General under the Spanish government should be delivered to the principal deputy, and that no plat should be admitted as evidence unless certified by him to be a true copy.

"Section 5" enacts "That so much of the act entitled "An act for ascertaining and adjusting the titles within the territory of Orleans and the District of Louisiana," as makes it the duty of every claimant to lands within the territory of Louisiana, to deliver to the Recorder of land titles a plat of the tract or tracts claimed by him be and the same is hereby repealed so far as relates to claimants whose tracts had not been surveyed by the proper officer under the Spanish government prior to the 20th December, 1803. And the Commissioners appointed for ascertaining the titles and claims to lands within either the territory of Louisiana or that of Orleans are hereby authorized to direct the officer exercising the powers of Surveyor General within the same to execute such surveys as they may think necessary for the purpose of deciding on claims presented for their decision, *Provided* that the expense of executing such surveys shall be defrayed by the parties claiming the land unless the same be claimed by a legal French or Spanish grant made and completed before the 1st October, 1800. *And provided also*, and it is hereby further enacted, that every such survey as well as every other survey by whatever authority heretofore executed, those of the above mentioned legal and complete titles only excepted, shall be held and considered as private surveys only: and all the tracts of land the titles to which may be ultimately confirmed by Congress in conformity with the provisions of the act above mentioned, shall prior to the issuing of patents be resurveyed if judged necessary under the authority of the per-

son exercising the power of Surveyor General, and at the expense of the parties."

On the 21st of April, 1806, an act was approved containing the following clauses altering the law of 1805:

Sec. 1. That every person or persons claiming a tract of land by virtue of the second section of the act to which this act is a supplement, and who had commenced an actual settlement on such tract prior to the 1st day of October, 1800, and had continued actually to inhabit and cultivate the same during the term of three years from the time when such actual settlement had commenced, and prior to the 20th of December, 1803, shall be considered as having made such settlement with the permission of the proper Spanish officer, although it may not be in the power of such person or persons to produce sufficient evidence of such permission."

"*Sec.* 2. That every person or persons rightfully claiming a tract of land, not exceeding six hundred and forty acres, by virtue of the act to which this act is a supplement, shall be confirmed in his or their claims, if otherwise embraced by the provisions of the said act, although the person or persons under whom the claim or claims originated, were not, at the time when the same originated, above the age of twenty-one years. *Provided*, that the tract of land thus claimed had been for the space of ten consecutive years prior to the 20th of December, 1803, in the quiet possession of and actually inhabited and cultivated by such person or persons or for his or for their use."

Section 7 authorizes Commissioners to change the place of their sittings or to send a member of the Board to obtain evidence which could not otherwise be conveniently had.

On the 3d March, 1807, an act was approved modifying the act of the 2d March, 1805, with the provisions:

"*Sec.* 1. That so much of the first section of the act entitled an "act for ascertaining and adjusting the titles and claims to land within the territory of Orleans and the district of Louisiana," as provides that no incomplete title shall be confirmed unless the person in whose name the warrant or order of survey had been granted, was at the time of its date either the head of a family or above the age of 21 years, be and the same is hereby repealed."

Sec. 2. That any person or persons or the legal representatives of any person or persons who on the 20th of December, 1803, had for ten consecutive years prior to that day been in possession of a tract of land not claimed by any other person, and not exceeding two thousand acres, and who were on that day resident in the territory of Orleans or Louisiana, and had still possession of such tract of land, shall be confirmed in their titles to such tract of land, *Provided*, that no claim to a lead mine or salt spring shall be confirmed merely by virtue of this section. *And provided* also, that no more land shall be granted by virtue of this section than is actually claimed by the party, nor more than is contained with-

in the acknowledged and ascertained boundaries of the tract claimed."

Section 4 gives power to the Commissioners to grant *final confirmation* "upon all claims to lands within their respective districts where the claim is made by any person or persons or the legal representatives of any person or persons who were on the 20th day of December, 1803, inhabitants of Louisiana, and for a tract not exceeding the quantity of acres contained in a league square, and which does not include either a lead mine or a salt spring, which decision of the Commissioners, when in favor of the claimant, shall be final against the UnitedStates, any act of Congress to the contrary notwithstanding."

Section 5 extends the time for filing notices and evidences of claims with the Recorder to the 1st July, 1808, and then enacts "that the rights of such persons as shall neglect so doing within the time limited by this act, shall so far as they are derived from or founded on any act of Congress ever after be barred and become void, and the evidences of their claims never after admitted as evidence in any court of law or equity whatever."

Section 6 provides that Commissioners shall file final decisions in favor of claimants with the Surveyor General, and that he shall issue a certificate to the party which, when transmitted to the Secretary of the Treasury, shall entitle him to a patent.

Section 7 provides for the survey of lands confirmed by the Commissioners unless a previous survey was made and is of record under French or Spanish governments. And also authorizes the Commissioners to direct the surveyor to resurvey any tract of land they choose which has been already surveyed.

Section 8 requires Commissioners to report their opinion upon all claims not finally confirmed by them, classifying them as follows: 1. "Claims which in the opinion of the Commissioners ought to be confirmed in conformity with the provisions of the several acts of Congress for ascertaining and adjusting the titles and claims to land within the territories of Orleans and Louisiana." 2. "Claims which, though not embraced by the provisions of the said acts, ought nevertheless in the opinion of the Commissioners to be confirmed in conformity with the laws, usages, and customs of the Spanish government." 3. "Claims which neither are embraced by the provisions of the said acts nor ought in the opinion of the Commissioners to be confirmed in conformity with the laws, usages and customs of the Spanish government." Said reports to be laid before Congress by the Secretary of the Treasury.

On the 15th February, 1811, an act was approved requiring the Surveyor General to survey such land in the territory of Louisiana as the President may direct. The same act also establishes a Land office with a Register and Receiver for the sale of lands of the United States. It also authorizes the President to direct lands which have been surveyed, to be sold at public auction, *Provided*

however, that till after the decision of Congress thereon, no tract of land shall be offered for sale the claim to which has been in due time and according to law presented to the Recorder of land titles in the district of Louisiana, and filed in his offices for the purpose of being investigated by the Commissioners appointed for ascertaining the rights of persons claiming lands in the territory of Louisiana."

On the 3d March, 1811, an act was approved by which a Land office was established, and the President authorized to appoint a Register and Receiver. By the same act the Surveyor General is required to survey so much of the public land as the President shall direct, and under the same rules with the lands north of the Ohio, and above the mouth of the Kentucky river. By the same act the President is authorized to direct so much of the land thus offered for sale as he thinks proper to be offered for sale. He can also reserve one township for a seminary of Learning; the sixteenth section for schools, saline springs and lead mines, and the land contiguous to them. The sales are to be regulated by the acts governing sales north of the Ohio and above the mouth of the Kentucky river. The act further provides, "That till after the decision of Congress thereon, no tract of land shall be offered for sale the claim to which has been in due time, and according to law, presented to the Recorder of land titles in the district of Louisiana and filed in his office for the purpose of being investigated by the Commissioners appointed for ascertaining the rights of persons claiming lands in the territory of Louisiana."

This act also repeals the act of February 15th, 1811, and published on p. 471 of the 8th vol. of the U. S. Statutes at large.

GOVERNMENT.

On the 4th June, 1812, the name of the territory of Louisiana was changed to Missouri. The law fixes the tenure of the Governor's office at three years, that of Secretary at four years, vests the legislative power in a council and a House of Representatives, fixes the tenure of the Supreme court and Justices at 4 years. Previous laws continued until altered by General Assembly. The change of government was to take place on the first monday in December, 1812.

LAND LAWS.

On the 13th June, 1813, an act was approved by which it was provided "That the rights, titles and claims to town or village lots, out lots, common field lots, and commons, in, adjoining and belonging to the several towns or villages of Portage des Sioux, St. Charles, St. Louis, St. Ferdinand, Village a Robert, Carondelet, Ste. Genevieve, New Madrid, New Bourbon, Little Prairie, and Arkansas in the territory of Missouri, which lots have been inhabited, cultivated or possessed prior to the 20th of December, 1803, shall be and the same are hereby confirmed to the inhabitants of

the respective towns or villages aforesaid, according to their several right or rights in common thereto, *Provided* that nothing herein contained shall be construed to affect the rights of any persons claiming the same land or any part thereof whose claims have been confirmed by the Board of Commissioners for adjusting and settling claims to land in the said territory. And it shall be the duty of the principal deputy surveyor for the said territory as soon as may be to survey or cause to be surveyed and marked, (where the same has not already been done according to law,) the out boundary lines of the said several towns or villages, so as to include the out-lots, common field lots and commons thereto respectively belonging. And he shall make out plats of the surveys which he shall transmit to the Surveyor General who shall forward copies of the said plats to the Commissioner of the general land office, and to the Recorder of land titles; the expense of surveying the said out boundary lines shall be paid by the United States out of any monies appropriated for the survey of the public lands."—All lots not owned by individuals, or held as commons, or reserved for military uses, are reserved for the support of schools, provided the whole does not exceed one twentieth of the whole of the towns or villages. The act further provides, "That every claim to a donation of lands in the said territory in virtue of settlement and cultivation which is embraced by the report of the Commissioners transmitted to the Secretary of the Treasury, and which by the said report shall appear not to have been confirmed merely because permission by the proper Spanish officer to settle has not been duly proven: or because the tract claimed, although inhabited, was not cultivated on the 20th of December, 1803; or not to have been confirmed on account of both said causes; the same shall be confirmed in case it shall appear that the tract so claimed was inhabited by the claimant or some one for his use prior to the 20th December, 1803, as aforesaid, and cultivated in eight months thereafter, subject however to every other limitation and restriction prescribed by former laws in respect to such claims; and in all cases where it shall appear by the said report or other records of the Board that claims to land have not been confirmed merely on the ground that the claim was for a greater quantity than 800 arpens, French measure, every such claim to the extent of eight hundred arpens shall be confirmed."

The act requires the Recorder of land titles to inform the commissioner of the Land office of the tracts so confirmed, also the deputy Surveyor. Upon the return of the plats of survey, he is required to give the claimants certificates of confirmation, upon which the commissioner is directed to issue patents. The deputy Surveyor is required to survey "the land the claims to which are directed to be confirmed, and the lands the claims to which have been confirmed by the Board of commissioners, where the same has not been already surveyed under the authority of the United

States." He is also required to furnish the Surveyor General with a connected plat of all the land surveyed at any time under the U. States, by whom copies are to be furnished to the Commissioner and the Recorder of land titles. The same section authorizes and requires the survey of all lands directed by the President and their division into sections. The law also gives the Deputy surveyor access to the books and papers of the Recorder, to enable him to obtain the completest description of the land confirmed or required for other reasons to be surveyed.

The act further provides, "That every person or persons claiming lands in the territory of Missouri, who are actual settlers on the lands which they claim, and whose claims have not been heretofore filed with the Recorder of land titles for the said territory, shall be allowed until the first of December next (1812) to deliver notices in writing and the written evidences of their claims to the said Recorder; and the notices and evidences so delivered within the time limited by this act, shall be recorded in the same manner and on payment of the same fees as if the same had been delivered before the 1st July, 1808, but the rights of such persons as shall neglect so doing within the time limited by this act, shall so far as they are derived from or founded on any act of Congress ever after be barred and become void, and the evidences of their claims never after admitted as evidence in any court of the U. S. against any grant derived from the United States."

By the same act the Recorder is substituted in the stead of the commissioners in respect to claims filed between 13th June and the 1st December, 1812, and invested with the same powers save only that "all his decisions shall be subject to the revision of Congress."

He is also required to report the cases above alluded to and the cases previously laid before the commissioners, but remaining undecided, to the commissioner of the General land office, with his remarks and opinions, and the commissioner is required to lay the report before Congress at its next session.

On the 3d March, 1813, an act was approved which provides, "That every person or persons who had filed a notice of claim to any tract of land lying within the district of Louisiana (now territory of Missouri) with the Recorder of land titles according to law, and have not exhibited any testimony or written evidence in support of the same, and whose claim has not already been confirmed, shall be allowed until the 1st of January next 1814) to deliver to the Recorder of land titles for said territory the written evidence, or produce other testimony in support of his or their claim, notice whereof had been filed as aforesaid, and the written evidence delivered to the said Recorder within the time limited by this section in support of claims filed as aforesaid, shall be by him recorded in the same manner, and on receiving the same fees allowed by former acts for recording written evidence of claims to land in the said

district, and the rights of any such person neglecting to deliver the evidence of their claims within the time above mentioned, shall become barred and void, in so far as the same was derived from the United States, and the evidence thereof be incapable of being admitted in any court whatsoever."

The Recorder is invested with the same powers in respect to the claims above alluded to, possessed by the Board of commissioners in respect to claims laid in prior to the 1st July, 1808. He is also required to report upon these claims to the commissioners with his opinion as to the propriety of confirming them, and the commissioner is required to lay the report before Congress at its next session

The act further provides, "That every person whose claim to a donation of a tract of land in said district has been confirmed by the Board of commissioners, appointed for ascertaining the rights of persons claiming land in said district, and is embraced in their report transmitted to the Secretary of the Treasury, or which has been confirmed by the Recorder of land titles under the third section of the act entitled "An act making further provision for settling claims to land in the territory of Missouri," approved 13th June, 1812, shall be entitled to a grant for 640 acres, notwithstanding a less quantity shall have been allowed to him by the decision of the said Commissioners or Recorder of land titles, *Provided*, that in no case shall the grant be for more land than was claimed by the party in his notice of claim, nor for more land than is contained within the acknowledged and ascertained boundaries of the tract claimed."

The act further provides, "That the principal deputy Surveyor for the said territory shall survey or cause to be surveyed under the direction of the Surveyor General a tract of six hundred and forty acres of land to each claimant of a donation tract whose claim has been confirmed as aforesaid, except as provided by the preceding section, where the quantity claimed by the party was less than six hundred and forty acres, and where the ascertained boundaries of the tract claimed does not include six hundred and forty acres, in which cases the survey shall contain only the land claimed, and the tracts thus to be surveyed shall consist of unappropriated lands, and shall in every case contain the improved lands by virtue of the settlement on and cultivation of which the claimant's right to a donation has been confirmed, and in all cases where by reason of adjacent prior claims or the continuity of improvements of the persons entitled to donation grants, each claimant cannot obtain a tract of 640 acres, the vacant lands applicable to the object shall be divided between the claimants in such manner as shall appear to the principal deputy surveyor most equitable; and whenever plats of surveys shall have been returned by the principal deputy surveyor to the office of the Recorder of land titles, it shall be the duty of the Recorder to issue for each

tract, according to the survey returned to him, a certificate in favor of the party to each person entitled thereto, which shall be transmitted to the commissioner of the General land office: and if it shall appear to the satisfaction of the said commissioner that such certificate was fairly obtained, according to the true intent and meaning of this act, then in that case patents shall be granted in like manner as is provided by law for other lands of the United States."

On the 12th April, 1814, an act was approved, containing the following provisions confirming certain titles, viz:

"That every person or persons, or the legal representatives of any person or persons claiming lands in the State of Louisiana or the territory of Missouri, by virtue of any incomplete French or Spanish grant or concession, or any warrant or order of survey, which was granted prior to the 20th December, 1803, for land lying within that part of the State of Louisiana, which composed the late territory of Orleans, or which was granted for lands lying within the territory of Missouri, before the tenth day of March, 1804, and where the claimant or the person under whom he claims were resident in the province of Louisiana, at the respective times aforesaid, or at the time the said concession, warrant, or order of survey was granted, and whose claims have been filed with the proper Register or Recorder of land titles, according to law, and are embraced in the report of the Commissioners, Register or Recorder for the district within which the lands claimed do lie, in every case where it shall appear by the said report of the Commissioners, Register or Recorder that the concession, warrant or order of survey under which the claim is made, contains a special location or had been actually located or surveyed within the late territory of Orleans before the 20th December, 1803, or actually located or surveyed within the territory of Missouri, before the 10th day of March, 1804, by a surveyor duly authorized by the government making such grant, such persons shall be and they are hereby confirmed in their claims, *Provided*, that no claim shall be confirmed by this section which shall have been adjudged by either of the Boards of commissioners or a Register or Receiver of public monies, or a Recorder acting as such to be antedated or otherwise fraudulent: nor any one to claim a greater quantity of land than the number of acres contained in one league square; nor the claim of any person in his own right who has received in his own right a donation grant from the United States in said State or territory. *And provided also*, That no confirmation made by this section, shall affect the rights of any person claiming the same lands or any part thereof, whose claim has been confirmed by a Board of commissioners for ascertaining and adjusting claims to land in said State or territory, nor preclude a judicial decision between private claimants in such interfering claims."

By the same act it was also provided, "That every person or

persons claiming lands in the said State or territory by right of donation under any former laws, whose claims are contained in the report of the Register and Receiver of public monies, or of the Recorder of land titles made or hereafter to be made under existing laws, and which claims shall appear by the said reports not to have been confirmed merely because the tracts claimed were not inhabited on the 20th December, 1803, such person or persons shall be and they are hereby confirmed in their respective claims, *Provided*, that in every other respect such claims shall be embraced by the provisions and conform to the limitations and restrictions prescribed by former laws for granting the right of donation in the said State and territory.

By the 3d section it was made the duty of the Recorder of land titles to issue orders of survey in the cases provided and upon the return of the surveyor to grant a certificate of confirmation directed to the commissioner of the General land office by whom patents were to be issued.

By the 4th section the principal deputy surveyor is required to execute the order of survey, and return plats to the Recorder and the Surveyor General.

By the 5th section it was enacted, "That every person and the legal representatives of every person who has actually inhabited and cultivated a tract of land lying in that part of the State of Louisiana which composed the late territory of Orleans, or in the territory of Missouri, which tract is not rightfully claimed by any other person, and who shall not have removed from the said State or territory, shall be entitled to the right of preemption in the purchase thereof under the same restrictions, conditions, provisions, and regulations in every respect, as is directed by the act entitled "An act giving the right of preemption in the purchase of lands to certain settlers in the Illinois territory," passed February 5th, 1813.

NEW MADRID CERTIFICATES.

On the 17th February, 1815, an act was approved containing the following provisions, viz:

"That any person or persons owning lands in the county of New Madrid, in the Missouri territory, with the extent the said county had on the tenth day of November, 1812, and whose lands have been materially injured by earthquakes, shall be and they are hereby authorized, to locate the like quantity of land on any of the public lands of the said territory the sale of which is authorized by law, *Provided*, that no person shall be permitted to locate a greater quantity of land under this act than the quantity confirmed to him except the owners of lots of ground or tracts of land of less quantity than 160 acres, who are hereby authorized to locate and obtain any quantity of land not exceeding 160 acres, nor shall any person be entitled to locate more than 640 acres, nor shall any

such location include any lead mine or salt spring. *And provide also*, that in every case where such location shall be made according to the provisions of this act, the title of the person or persons to the land injured as aforesaid shall revert to and become absolutely vested in the United States."

The second section provides, "That whenever it shall appear to the Recorder of land titles by the oath or affirmation of a competent witness or witnesses that any person or persons are entitled to a tract or tracts of land under the provisions of this act, it shall be the duty of the said Recorder to issue a certificate thereof to the claimant or claimants; and upon such certificate being issued and the location made on the application of the claimants by the principal deputy Surveyor for said territory, or under his direction whose duty it shall be to cause a survey thereof to be made, and to return a plat of each location made to the said Recorder together with a notice in writing designating the tract or tracts thus located, and the name of the claimant on whose behalf the same shall be made; which notice and plat the said Recorder shall cause to be recorded in his office, and shall receive from the claimant for his services on such claim the sum of two dollars for receiving the proof, issuing the certificate and recording the notice and plat as aforesaid."

The 3d section makes it the duty of the Recorder to send a report of the claims allowed and locations made to the commissioner of the General land office, also to give the party a certificate "which certificate shall be filed with the Recorder within twelve months after date, and the Recorder shall thereupon issue a certificate in favor of the party, which certificate being transmitted to the commissioners of the General land office shall entitle the party to a patent to be issued in like manner as is provided by law for other public land of the United States."

By an act approved April 9, 1818, it was provided, that every person claiming lands under the foregoing act in favor of the sufferers by earthquakes, should present his claim, and produce evidence thereof before the Recorder of land titles on or before the 1st January, 1819.

By an act approved April 26, 1822, it was provided that locations theretofore made by virtue of the New Madrid act of 17th February, 1815, should be confirmed although they did not conform to sectional lines. It also requires all locations thereafter made to conform to the legal subdivisions.

By the act of March 2d, 1827, it is provided that locations therefore made by virtue of warrants under the act of 1815, in lieu of lots and outlots in and adjacent to New Madrid and Little Prairie not exceeding 640 acres shall be perfected into grants.

The act of March 2d, 1831, provides that New Madrid grants may be located on any lands subject to sale in Missouri.

GOVERNMENT.

By an act approved June 4th, 1812, the people were authorized to elect members of the legislative council; biennial sessions of the Legislature were required to be held at St. Louis; and the judges of the superior court to hold superior and circuit courts at such times and under such rules as the Legislature may prescribe.

By an act approved 29th April, 1816, it was provided that claims embraced in the reports of the Recorder of land titles, acting as commissioner, dated 1st November, 1815, and 2d February, 1816, where the decisions are in favor of the claimants, shall be confirmed, viz: 1. Confirmations of village claims, under the act of 13th June, 1812. 2. Grants of the late Boards of Commissioners, extended by virtue of the 4th section of the act of 3d March, 1813. 3. Grants and confirmations under the several acts of Congress commencing with the act of 13th June, 1812. It is also provided that every person and their legal representatives whose claim is confirmed, wherever his claim is located and surveyed, shall have a certificate from the Recorder that he is entitled to a patent, and the patent shall thereupon be issued.

LAND LAWS.

By an act approved February 17th, 1818, land offices were established in Howard, in Arkansas, in Lawrence counties, at the town of Jackson, in Cape Girardeau county, and the districts in which each was to act including the one at St. Louis, were designated by metes and bounds. (U. S. Statutes at large, v. 3, p. 406.)

The 2d section authorizes the President to open any or all of these offices whenever a sufficient quantity of public lands have been surveyed in any or all the districts; and to appoint Registers and Receivers. It also prescribes their powers and duties.

The 3d section provides, "That whenever a Land office shall have been established in any of the districts aforesaid, and a Register and Receiver of public monies appointed, the President of the U. S. shall be and he is hereby authorized to direct so much of the public lands lying in such district as shall have been surveyed according to law to be offered for sale with the same reservations and exceptions, and on the same terms and conditions in every respect, as was provided for the sale of the public lands in the territory of Louisiana by the 10th section of an act entitled "An act providing for the final adjustment of claims to lands, and for the sale of public lands in the territories of Orleans and Louisiana, and to repeal the act passed for the same purpose, and approved February 16th, 1811," except that the Register and Receiver of public monies alone may be competent to superintend the public sales, and that instead of one township for the support of a seminary of Learning, there shall be two townships located for the purpose by the Secretary of the Treasury, and reserved from Sale, *Provided*, that one of said townships shall be located on the waters of the Missouri, and the other on the waters of the Arkansas."

On the 3d day of March, 1819, an act was approved by which it was provided that the 5th section of the act of April 12th, 1814, shall be construed to extend to citizens of Howard county as organized by the Legislature 23d January, 1816. The 2d section provides that the right of preemption shall not be construed to "affect any right derived

from the U. S. by purchase at public or private sale of the lands claimed under the aforesaid act." The 3d section provides that those who would have had the right of preemption, had not the lands been reserved for schools, shall still have it, and authorizes the Register and Receiver to select for schools the quantity so disposed of to actual settlers out of any other public land in the same township.

GOVERNMENT.

On the 6th March, 1820, an act was approved, by which the people of Missouri territory were authorized to frame a constitution preparatory to admission into the Union as a State. The boundaries made by that act, were the same as at present save only where they have been changed by the acquisition of the country west of the meridian line, which passes through the middle of the mouth of the Kanzas river. The 2d section also provides, that the proposed State shall have concurrent jurisdiction over the Mississippi, and all other bordering streams, and that all navigable streams, running into the Mississippi, shall forever remain common highways. The 3d, 4th and 5th sections make provision for the election and organization of the convention. The 6th section gives the State the sixteenth section of every township for schools; twelve salt springs on certain conditions; five per cent. of the net proceeds of the sales of lands in the State, three per cent of which are to be expended for roads and canals within it, and two per cent for roads leading to it by act of Congress; four entire sections to enable the State to fix the State government; and one township to be reserved for a seminary of Learning; *Provided*, that the public lands thereafter disposed of, shall be exempted from taxation for five years after their sale. The 7th section provides that a copy of the constitution shall be transmitted to Congress. And the last section provides that slavery shall be prohibited in the whole of the Louisiana territory forever thereafter north of 36 deg. and 30 min.

On the 2d day of March, 1821, a joint resolution was approved admitting Missouri into the Union upon condition that the fourth clause of the 26th section of the 3d article of its constitution shall not be construed to authorize the enactment of a law excluding citizens of other States from the enjoyment of the privileges to which they are entitled by the constitution of the U. S. The State is required by a legislative act to assent to this condition, upon the reception of which by the President, and the publication of his proclamation to that effect the admission of the State shall be complete.

On the 19th July, 1820, the convention of Missouri adopted an ordinance acceding to all the conditions prescribed by the act of the 3d March, 1819, and praying Congress to modify certain portions thereof.

By an act approved June 26th, 1821, the legislature of this State declared the assent of this commonwealth to the fundamental condition prescribed by the joint resolution of Congress approved 2d May, 1821. The preamble to this act is a bitter but just criticism upon the Congressional resolution.

By an act approved May 3d, 1822, it was provided that the Secretary of the Treasury shall pay to the State 3 per cent of the proceeds of the sales of land dating from January 1, 1821, to be appropriated

to the construction of roads and canals under the direction of the Legislature.

By an act approved 3d March, 1823, a Land office was established at Lexington, and all the lands west of the range line dividing the 23d and 24th tiers of townships west of the 5th principal meridian in the Howard district are formed into the western land district. A Register and Receiver are provided for, and the line between the St. Louis and Jackson districts changed.

By an act approved 3d March, 1823, it was provided, that where the 16th section has already been disposed of, the Register and Receiver shall select an equivalent from other lands as near to it as may be and these lands are granted to the State for schools. The 2d section makes provision relative to the salt springs granted to the State.

By an act approved May 26th, 1824, it was provided that a new land district, to be called the district of Salt river, should be established, and a Register and Receiver appointed. It included the north eastern quarter of the State. Lands hitherto offered for sale are subjected to entry.

By an act approved May 26th, 1824, it was provided "That it shall and may be lawful for any person or persons or their legal representatives claiming lands, tenements or hereditaments in that part of the late province of Louisiana which is now included within the State of Missouri by virtue of any French or Spanish grant, concession, warrant, or order of survey, legally made, granted or issued, before the 10th day of March, 1804, by the proper authorities to any person or persons resident in the province of Louisiana at the date thereof, or on or before the 10th March, 1804, and which was protected or secured by the treaty between the United States and the French Republic of the 30th April, 1803, and which might have been perfected into a complete title under and in conformity to the laws, usages and customs of the government under which the same originated, had not the sovereignity of the country been transferred to the United States, in each and every such case it shall and may be lawful for such person or persons or their legal representatives, to present a petition to the District court of the State of Missouri, setting forth fully, plainly and substantially the nature of his, her, or their claim to the lands, tenements, or hereditaments, and particularly stating the date of the grant, concession, or order of survey under which they claim, the name or names of any person or persons claiming the same or any part thereof by a different title from that of the petitioner, or holding possession of any part thereof otherwise than by the lease or preemption of the petitioner; and also if the United States be interested on account of the lands within the limits of such claim, not claimed by any other person than the petitioner; also the quantity claimed, and the boundaries thereof when the same may have been designated by boundaries; by whom issued and whether the said claim has been submitted to the examination of either of the tribunals which have been constituted by law for the adjustment of land titles in the present limits of the State of Missouri, and by them reported on unfavorably, or recommended for confirmation; praying in said petition that the validity of such title or claim may be inquired into, and decided by the said court; and the said court is hereby authorized and required to

hold and exercise jurisdiction of every petition presented in conformity with the provisions of this act, and to hear and determine the same on the petition in case no answer or answers be filed after due notice; or on the petition and the answer or answers of any person or persons interested in presenting any claim from being established: and the answer of the District attorney of the United States, where he may have filed an answer, according to the evidence which shall be adduced by the petitioner, by any person interested in preventing the decree of the court in favor of the title of the petitioner, and by the United States, and in conformity with the principles of justice, and according to the laws and ordinances of the government under which the claim originated, and the copy of such petition with a citation to any adverse possessor or claimant, shall be served on such possessor or claimant in the ordinary legal manner of serving such process in the State of Missouri at least fifteen days before the term of the District court of the United States to which the same is made returnable and in like manner on the District attorney of the United States where the government is interested in the defence." The 2d section provides that petitions presented under the act, shall be conducted according to the rules of a court of equity, and that appeals may be taken within one year to the Supreme court. The 3d section provides that evidence therefore taken by tribunals established for adjustment of claims shall be admissible when the witness is dead. The 5th section provides that any claims to land within the purview of the act which shall not be asserted by petition within two years after the date of the act, and prosecuted to final decision by the claimant within three years, shall be forever barred. The 6th section authorizes the successful claimant to present a copy of the decree to the Commissioner of the General land office, and requires the latter thereupon to issue a patent. The 6th section provides that claims decided against the claimant or barred, shall revert to the United States. The 11th section provides where lands thus recovered shall have been sold by the United States, the claimant may enter a like quantity in any land office in the State. By 12th section the claim of Jacques Clamorgan in St. Charles and Lincoln counties is excepted from its operation. The 14th section extends the whole act to the territory of Arkansas.

By an act supplemental to the act of 1812, approved May 26, 1824, it is provided "That it shall be the duty of the individual owners or claimants of town or village lots, outlots and common field lots in, adjoining or belonging to the several towns or villages of Portage de Sioux, St. Charles, St. Louis, St. Ferdinand, Villa a Robert, Carondelet, Ste. Genevieve, New Madrid, New Bourbon, and Little Prairie in Missouri, and the village of Arkansas in the territory of Arkansas whose lots were confirmed by the act of Congress of the 30th (13th) June, 1812, entitled "An act making further provisions for the settling of land claims in the territory of Missouri," on the ground of inhabitation, cultivation, or possession, prior to the 20th of December, 1803, to proceed within eighteen months after the passage of this act to designate their said lots by proving before the Recorder of land titles for said State and territory the fact of such inhabitation, cultivation, or possession, and the boundaries and extent of each claim, so as to enable the Surveyor General to distinguish the private from the

vacant lots appertaining to the said towns and villages." The 2d section provides that after the expiration of the time above allowed, the Surveyor General under the direction of the Commissioner of the Land office shall survey and set apart to these towns and villages so many of these lots as are not proved up, and not reserved by the President for military purposes, and as shall not exceed one twentieth of all the lands included in the general survey of said towns for the support of schools, according to the 2d section of the act of 1812; and also to survey the commons belonging to said towns under the provisions of said act, provided that lots relinquished on account of earthquakes and in lieu of which lands have been located elsewhere, shall not be surveyed or estimated in the quantity to which the towns are entitled. The 3d section requires the Recorder to issue a certificate for each claim proved up, and to report the claims proved and the lots set apart for the towns to the Commissioner of the Land office. The 4th section extends the provisions of this act and of the act of 1812 to Mine a Burton.

By the act of May 22d, 1826, the time of filing petitions under the provisions of the act of May 26th, 1824, is extended to the 26th May, 1828.

By the act of May 24th, 1828, the act of May 26th, 1824, is continued in force for the purpose of filing petitions as required by that act until the 26th May, 1829; and is continued in force for the purpose of enabling claimants to obtain a final decision on their claims, (the said claims having been exhibited within the time above specified) until the 26th May, 1830.

By an act approved January 27th, 1831, it was provided "That the United States do hereby relinquish to the inhabitants of the several towns or villages of Portage de Sioux, St. Charles, St. Louis, St. Ferdinand, Villa a Robert, Carondelet, Ste. Genevieve, New Madrid, New Bourbon, and Little Prairie, in the State of Missouri, all the right, title, and interest of the United States in and to the town or village lots, outlots, common field lots, and commons in, adjoining and belonging to the said towns or villages confirmed to them respectively by the 1st section of the act of Congress, entitled "An act making further provision for settling the claims to land in the territory of Missouri," passed the 13th June, 1812, to be held by the inhabitants of the said towns and villages in full property, according to their several rights therein, to be regulated or disposed of for the use of the inhabitants, according to the laws of the State of Missouri." The 2d section relinquishes the claim of the United States to the lots reserved for schools in said towns by the 2d section of the act of 1812.

By the act of July 9th, 1832, it is provided "That it shall be the duty of the Recorder of land titles, and two commissioners to be appointed by the President, by and with the advice and consent of the Senate, to examine all the unconfirmed claims to land in that State heretofore filed in the office of the said Recorder, according to law founded upon any incomplete grant, concession, warrant, or order of survey, issued by the authority of France or Spain prior to the 10th March, 1804, and to class the same so as to show 1st, what claims in their opinion should in fact have been confirmed, according to the laws, usages and customs of the Spanish government, and the practice

of the Spanish authorities under them, at New Orleans, if the government under which said claims originated, had continued in Missouri; 2dly, what claims in their opinion are destitute of merit in law or equity under such laws, usages, customs, and practice of the Spanish authorities aforesaid; and shall also assign their reasons for the opinions so to be given. And in examining and classing such claims, the Recorder and Commissioners shall take into consideration as well the testimony heretofore taken by the Board of Commissioners and Recorder of land titles upon those claims, as such other testimony as may be admissible under the rules heretofore existing for taking such testimony before said Boards and Recorder: and all such testimony shall be taken within twelve months after the passage of this act." The 2d section provides, that the Recorder's office shall be open for such examination for two years from the date of the organization of the Board. Also that reports shall be annually made. The 3d section provides that after the final report of the Commissioners the lands embraced in the second class shall be subject to sale as other public lands—that those in the first class shall be reserved until decided upon by Congress, when if decided against, they too shall be subject to sale—and that actual settlers on both classes holding under such rejected claims, shall have a right of preemption.

By an act approved March 2d, 1833, supplemental to "An act for the final adjustment of land claims in Missouri," it was provided, "That the provisions of the act to which this is a supplement shall be extended to, and embrace in its operations every claim to a donation of land in the State of Missouri held in virtue of settlement and cultivation; and the Commissioners appointed under the above recited act shall proceed to consider, decide and report upon the aforesaid claims under the provisions of the several acts of Congress heretofore passed in relation to said claims, and under such provisions and restrictions of the act to which this is a supplement as may be applicable thereto." And by the 2d section it is provided, "That it shall be lawful for the Recorder and Commissioners aforesaid to continue to take the testimony of all such claims as heretofore described, for and during the term of two years from the date of the act to which this is a supplement."

By an act approved June 7th, 1836, the tier of counties lying between the longitudinal line running through the mouth of the Kanzas and the Missouri river, commonly called the Platte country, was added to the State, the act to take effect so soon as the Indian title could be extinguished, and the concurrence of the State Legislature was given.

The southwestern land district was established by act June 26th, 1834.

By an act approved July 4th, 1836, it was provided "That the decisions in favor of land claimants made by the Recorder of land titles in the State of Missouri, and the two Commissioners associated with him by virtue of an act entitled "An act for the final adjustment of land titles in the State of Missouri," (July 9th, 1832) and an act supplemental thereto (March 2d, 1803,) as entered in the transcript of decision transmitted by the said Recorder and Commissioners to the Commissioner of the General land office, and by him laid before Con-

gress at the two last and present sessions, be and the same are hereby confirmed, saving and reserving however to all adverse claimants the right to assert the validity of their claims in a court of justice. *Provided*, that nothing in this act contained shall apply to or be in confirmation of the claim of Don Carlos de Vilemont for a tract of land at Point Chicot. *And provided also*, that nothing in this act contained shall apply to or be in confirmation of the following claims, viz: Manuel Liza 6000 arpents, J. Coontz and Hempstead 450 arpents, Matthew Lancier 1200 arpents, Charles Tayon 1600 arpents, sons of Joe M.Pepin 5600 arpents. LouisLorimiere 30,000 arpents, Bartholomew Cousin 10,000 arpents, Manuel Gonzales Moro 800 arpents, Seneca Rollins 400 arpents, Wm.Long 400 arpents, Jas.Journey 400 arpents, JoachimLisa 6000 arpents, FrancisLacomb 400 arpents, Israel Dodge 7,056 arpents, Andrew Chevallier 400 arpents, Joseph Silvain 250 arpents, Jno.P.Cabanis 2000 arpents, Wm.Hartley 650 arpents, Wm. Morrison 750 arpents, Solomon Bellew 350 arpents, Pascal De'chemendey 7,056 arpents, Baptiste Aumere 240 arpents, Alcar Maniell 400 arpents, Jean Baptiste Valle 20,000 arpents, Israel Dodge 1,000 arpents, Walter Fenwick 10,000 arpents, John Smith T. 10,000 arpents, and Mackey Wherry 1600 arpents.

The 2d section provides that if it shall be found that any tract or part of a tract so confirmed has been previously disposed of by the United States; the confirmee shall be permitted to locate the same amount so lost on any lands of the United States in the State or in the territory of Arkansas conforming to legal subdivisions. The 3d section provides for the return of the Register's certificate of location, and the Recorder's certificate of confirmation to the Commissioner of the General land office, and the issue of the patent.

By an act approved June 17th, 1844, the act of May 26th, 1824, so far as it relates to this State, is revived, extended and reenacted for the term of five years. This act revives also the jurisdiction and powers of the Judge of the District court.

By an act approved 29th August, 1842, a new land district, called the Platte land district, was erected and parts of other districts were added to the Lexington district.

By an act approved June 17, 1844, it is provided that two Commissioners shall be appointed, one by the Governor of Iowa, and the other by the Governor of Missouri, who shall choose a third, and the three shall run and mark the line between the States. The 3d section enacts that the report of these Commissioners shall be final and conclusive.

ARTICLE IV.

Seigniorage on the Coinage of the United States.*

TREASURY DEPARTMENT, }
June 17, 1852. }

Sir:—In reply to your letter of the 15th, calling upon the Department for further information on the subject of the proposed charge at the Mint for seigniorage on gold bullion deposited by individuals for separation, assay, and coinage, I have the honor to state, that there is no seigniorage charged by the Mint in England, as the separation and assay of gold bullion there, is done by private individuals designated by the Bank or the Mint, and the latter receive no bullion except in a state fully prepared for immediate coinage. The expense of separating and assaying gold bullion, is a matter between the owners of it and the above parties, but the Department has no accurate information as to the amount of the charge made therefor; but from the best unofficial information it has been able to obtain on the subjet, it is believed the cost is nearly or quite one half of one per cent. The gold thus prepared for coinage is purchased by the Bank, which, by law, is obliged to receive and pay for it in coin at the standard price of £3 17*s.* 9*d.* per ounce, but the value of an ounce of gold in coin is fixed by law at £3 17*s.* 10½*d.* sterling, so that the Bank has an advantage of a penny half penny, or three cents per ounce, equal to about one fifth of one per cent. on its value.

Under these circumstances, individuals never present their bullion to the Mint for coinage, preferring this small charge which may be considered as a seigniorage on the part of the Bank, rather than to incur the trouble and delay of taking their bullion for coinage to the Mint. all of which is averted by presenting it directly at the counter of the Bank, between which institution and the Mint, the needful arrangements are made as regards the coinage. The Department, without being able to obtain official authority for the fact, understands that the Bank pays the Mint the expense upon such portion of bullion received by it in the above mode, which the institution requires to be put into coin, for much the larger portion of the gold in the vaults of the Bank, is always in the form of bars or ingots. As the bullion that is coined at the Mint belongs to the Bank, it would be but just and reasonable the latter should pay this expense, prticularly in view of the large and advantageous privileges she obtains and enjoys from the Government, with the further additional advantage already alluded to of about three

* The following letter from the acting Secretary of the Treasury to the chairman of the Committee on Ways and Means contains many facts, respecting the coinage of the United States, which will be found interesting to the intelligent reader. And from a consideration of the facts and arguments contained in this document, we are convinced of the propriety of changing a seigniorage on coinage at our mints.—*Ed.*

cents per ounce in the purchase of the bullion below its coined value, and which on the amount coined in the United States during the last year, would amount to nearly $100,000. These advantages would be a full justification for making the institution bear this comparatively small outlay.

As regards the British Mint, therefore, it appears there is no charge of seigniorage for parting, assaying, and alloying, from the simple fact that it obliges individuals to have those operations performed at their own proper expense, by private assayers, before she will receive the gold; and if any gratuitous service is performed by the Mint, it is merely the coinage, and that, as already stated, it is believed is paid by the Bank.

On silver coinage, the British Government has a seigniorage equal to about ten per cent., or what is the same thing, from pure silver of the value in gold of ninety shillings, it makes and issues one hundred shillings of coin, and will not receive silver for coinage from individuals except on the basis of giving for one hundred shillings of pure silver one hundred shillings in coin by tale, the latter containing only ninety shillings of pure silver.

The Government Mints in British India, which issue a very heavy coinage, charge a seigniorage of two per cent. on both gold and silver.

In France there is and always has been a charge of seigniorage on gold and silver. This charge at present in the French Mint is about three eighths of one per cent. on gold, and one per cent. ion silver.

The Continental European Mints, it is believed, are generally modeled on that of France; but the information on this point possessed by the Department does not warrant it in making any postive assertion respecting them, except that a seigniorage exists in Prussia and Denmark, but to what extent the Department is unable to state.

As regards your inquiries as to the probable bearing and the result of the charge of seigniorage upon gold bullion, the Department is decidedly of opinion that it would be both just and proper that such a charge should be made, and that no possible injourious consequence could flow from it, either as regards the currency of the country or the future supply of bullion, the receipts of which the Department believes would in no way be unfavorably affected by such a measure.

The Department has from an authentic source account sales of a shipment of California gold dust from New York to London, which produced, when melted in London, an assayed value including the silver from it of .....£1,008 5*s.* 8*d.*
The charges attending it in England were..... 4 15 0

Net amount sterling .....£1,003 10*s.* 8*d.*

The same gold at the Mint in Philadelphia, would have produced the sum of	$4,917 95
Loss, one half per cent. seigniorage	24 56
Leaving	$4,893 39
Which at the exchange of ten per cent. would amount to	£1,001 18*s.* 4*d.**
Proceeds in London, as exhibited above, are	£1,003 10*s.* 8*d.*
Deduct freight and insurance from NewYork to Liverpool, together three quarter per cent	7 11*s.* 3*d.*
	£995 19*s.* 5*d.*

which leaves an advantage of 60-100 per cent. in favor of retaining the bullion in the United States, even after paying the seigniorage of one half per cent.

The parting, alloying, assaying, and coining of gold dust, is an actual manufacture of a raw material from the crude state in which the metal is found at the mines, and by which its value to the owners, when made into coin, is increased greatly beyond the amount of the proposed charge by the Mint. The Department can see no just reason why this species of manufacturing of gold should be conducted for the benefit of individuals at the expense of the Treasury, which would not equally apply to a claim from the agriculturist to have in like manner his wheat ground into flour.

As a general rule, neither goverments nor individuals incur a particular expense for the benefit of others without making a charge therefor, nor is the justness of this rule lessened by the arguments, that though the benefit primarily inures to the individual it is ultimately for the general good of the community, and that in the acts of Government such as it reserves exclusively to itself, individual competition is prohibited.

In our own country the judiciary and the post office establishments are of the utmost importance and benefit to individuals as well as of great general advantage. The organization and general management of these two important institutions are reserved exclusively to the Government, yet the parties litigant are obliged to pay the costs of suits, and those who use the mails are taxed to an extent that fully reimburses the Treasury for its outlay. In like manner the progress of invention and knowledge is of vast importance to a nation, yet every inventor is taxed by the Government before he can secure his patent right, and where parties in the above cases, and in others, which might be named, refuse to submit to the charge made by the Government, they are debarred from the benefits which such payment would otherwise confer on them.

When bullion is coined gratuitously, it is manifest that a certain weight in gold is precisely of the same value as an equal weight in

* Is there not a mistake in figures here?—*Editor.*

coin. There will, therefore, be no reason for retaining it at home, and when the course of trade requires an export of specie, such coin will at once be shipped, and though it has been manufactured at great expense, it is immediately melted and treated as so much bullion. It is a pretty well-ascertained fact that of the coinage executed in the United States within late years, about two thirds of it has been exported, and by far the greater portion of it without ever having been at all in circulation. It is, therefore, evident from facts, as well as from common sense, that coinage gratis has no tendency to increase the home circulation. If a charge is made, say of one half of one per cent. for coinage, it is evident that coin would be worth one half per cent. more than an equal weight in bullion, and it would, therefore, be directly against the interest of the shipper to send coin as a remittance instead of bullion; for to melt up this coin abroad, and reduce it to its unmanufactured state the owner would lose one half per cent. The charge for seigniorage will, therefore, rather have the tendency to keep our coin at home for the circulation of the country, or if from concurring causes it went abroad, it would be an inducement to return it in order to save the loss of the half per cent.

It is of course not pretended that a seigniorage will prevent the exportation of the precious metals, but merely that it will retard the shipment of *coin*. Unmanufactured gold in the form of bars and ingots should therefore be issued by the Mint for the use of those who may have occasion to remit precious metals, and for the reasons already stated it will always be sent in preference to coin, which latter will remain the last, and form the circulation of the country until the supply of bars or ingots is first exhausted for any foreign demand.

The best authorities on the subject are decidedly in favor of a seigniorage, in proof of which reference is made to "Smith's Wealth of Nations," book IV., chap. 6; "Mills's Political Economy," vol. I., chap. 9; "McCulloh's Essays on Exchange, Interest, Money," &c. Chapter 3 of the Essay on Money, gives a full view of the subject. Alexander Hamilton's celebrated report on the establishment of a Mint is also very conclusive as regards it, and he recommends the imposition of a half per cent. seigniorage. (See American State papers, vol. VI; Finance, vol. I, pp. 95, beginning "A third point." He concludes as follows: "Under an 'impression that a *small* difference between the value of the coin 'and the Mint price for bullion is the least exceptional expedient 'for restraining the melting down or exportation of the former, and 'not perceiving if it be a very moderate one it can be hurtful in 'other respects, the Secretary is inclined to an experiment of half 'per cent. The fact which has been mentioned with regard to the 'price of gold bullion in the English market seems to demonstrate 'that such a difference may be made. In this case there must be 'an immediate payment made for the bullion offered to the Mint."

It was unquestionably the intention of Congress who passed the first Mint law to comply with the recommendation of Secretary Hamilton, but instead of charging one half per cent. for coinage, and providing funds for the prompt payment of the bullion on ascertaining its value, the charge of half per cent was made the condition not of coinage, but of prompt payment. It seems to have been taken for granted that the delay of coinage would always be so great that depositors would prefer the payment of the half per cent. rather than await the course of manufacture, and both the first and second bank of the United States were, therefore, in the practice of cashing Mint certificates, with the deduction of the half per cent.

Under the present system, Government provides funds for the prompt payment of bullion so soon as it is assayed and its value ascertained, which is from one to five days after the crude gold is deposited, so that not only is the coinage gratuitous, but the Government advances its funds to the amount of many millions to the owners of bullion submitting itself to the loss of interest and delay of manufacture. If the amount now set apart in the Treasury for the use of the bullion fund was applied to the redemption of the public debt, it would save in interest, an amount nearly or quite $400,000 per annum, a loss which is now incurred exclusively for the benefit of the owners of bullion.

This loss, however, will be avoided for the future, and without creating any inconvenience to depositors, should Congress pass the bill authorizing Mint certificates to be received in payment of all dues to the United States, and directing the present bullion fund to the extinguishment of so much of the public debt.

The present and proposed arrangements at the Mint, it may be confidently asserted, afford greater facilities for the prompt realization of bullion deposited for coinage, and at a less aggregate expense than at any other national Mint in the world.

A seigniorage of charge for coinage may exist in fact, though the coinage be nominally gratuitous. Thus, if the owner of bullion be delayed two months at the Mint before he can receive coin in return, this delay, estimating interest at the rate of six per cent., is equal to one per cent. for loss of interest on his money, for it would be the same to him, whether he obtained prompt pay for his bullion with a deduction, either as a charge for seigniorage or for the advance of the money, of one per cent., or waited two months to get the full value. A charge of this kind exists in every other country but our own; nowhere else is prompt payment made for the value of bullion without any discount, for even in England, as has been stated above, the bank retains three cents per ounce, equal, at the average rate of interest there, to the interest of twenty-five days.

It is proposed to limit the charge of seigniorage to the actual expense, but in no event to allow it to be more than one per cent.;

but from the best information the Department possesses, the charge will probably not exceed five eighths of one per cent., which is also intended to include the present charge authorized by law for the parting of the silver.

If the act respecting the new silver coinage now before Congress should become a law, by which the Mint and its branches are authorized, at the option of the depositors, to coin bars or ingots, and the charge for so doing is limited to the actual expense, it will, for ingots of $50 or $100, be much less than the above estimate, and still more so if they are made of the denomination of $500 or $1,000, or even of larger amounts. Under a provision of that kind, the probability is, that all the depositors would require their bullion to be returned in ingots of large denominations; for, with the Mint stamp, they would be equally valuable and available as coin, either for banking purposes or for exportation, and being subject to a greatly less charge at the Mint, would of course be more universally prepared.

These large ingots would also have a preference over coin, by the public and private banking institutions of the country, to be retained in their vaults as specie capital, and in all cases of foreign demand would possess the advantages for exportation of being more convenient, and, also, would not be subject to loss in weight by abrasion, as is always the case, to a greater or less extent, with coin which has been in general circulation; for the value of our coin abroad, as already stated, is exclusively governed by its weight as bullion.

Under the system of assaying large ingots, the coinage of the Mint would probably be limited to the comparative small amount of ten or fifteen millions annually, as the supply of coin would only be required for the actual wants of the country, and the above yearly additional amount would soon saturate the circulation, particularly as the substitution of ingots would let loose a vast amount of coin now resting in the vaults of the banks, and would likewise, to a considerable extent, no doubt, be used as general circulation between banking institutions and in settling large transactions.

It may also be observed, that there is nothing either in the existing or proposed law which prevents owners of gold dust from having it parted, alloyed, and cast into any sized ingots or bars by private individuals, if they prefer to do so, or can have it done more economically than at the Mint; and when thus properly prepared, as is now done in England, they could bring it to the Mint either for its stamp as ingots, or to be changed into coin at the option of the parties, and paying only the actual expense which may attend the one or the other process.

It is difficult to understand how the proposed charge for seignorage can in any way affect either the supply of gold to the country or its circulation here. If the course of trade requires an export of gold from the United States, no possible advantage can

accrue by first bringing the bullion here and saddling the Treasury or individuals with the expense of coinage, for the mere purpose of immediately transferring the coin thus made to foreign crucibles; and if, on the contrary, an export demand does not exist, our citizens who are the owners of this crude gold bullion will hardly send it to Europe in order to bring it back from thence in foreign coin, particularly when the expense for seigniorage or other charges, nearly or quite equivalent to that it is proposed to demand in the United States, will be exacted there, with the still heavier additional expense of double freight and double insurance, going and coming. It is an important fact bearing on this subject, that in France, where the permanent specie circulation is by far the greatest of any other nation, and where the coinage during the last year has been unprecedentedly large, they have a seigniorage, which shows that a charge on coinage has no effect in restricting its issue or encouraging its export.

So far as a foreign demand may exist upon the United States for gold, it is an object rather to be desired that such demand should be supplied by the article in its crude state rather than to subject us to all the tedious and expensive processes through which it must pass before it assumes the shape of coin; for the whole operation would result in loss of labor to the country, as well as a loss of the materials used in the process, without the least benefit to any one; for the owners of the bullion would of course receive as full a value for it in Europe as they could in the United States.

It, therefore, does not appear to be either good policy or justice to put the public Treasury to the expense of coining gold for exportation merely to have it remelted on its arrival in Europe. It may be as well to state that the cost in Philadelphia for acids employed in the parting process amounts, for this single item of expense, to $150,000 annually. Two thirds of which, besides the labor, is an actual loss to the country, if, as there is little doubt of the fact, that proportion of our entire coinage has been exported to Europe and there melted up and recoined.

The expenses connected with the preparation and coinage of gold bullion is greater at the present branches than at the Mint in Philadelphia, and will be still more so at San Francisco, when Congress establishes a Mint there; but the Department would respectfully suggest that the law on the subject should be so worded as to make the charge uniform at the Mint and its present, as well as any new branches which may be established, with, of course, the proposed maximum limit of one per cent.

For the reasons already assigned, the Department is convinced, that under the proposed new coinage law the depositors of gold dust will universally require bars or ingots, in which case, the expense of furnishing the needful additional coin that may be required for the circulation of the country will, so far as the cost of *coinage* is concerned, have to be at the expense of the National

Treasury, and the only charge to the owners of the bullion will be the very small one of forming it into large ingots.

I am, very respectfully, your obedient servant,

WM. L. HODGE,
Acting Secretary of the Treasury.

Hon. GEORGE S. HOUSTON,
Chairman Committee Ways and Means,
United States House of Representatives.

ARTICLE V.

We commend the following speech made by B. H. Payne, Esq., before the convention at Little Rock, Arkansas, to the perusal of every individual of the Southern and Western States.

The New Orleans project of a railroad to the Pacific, with a branch to St. Louis, is among the boldest enterprises of the times, and if Texas should favor the scheme by a liberal grant of lands, in aid of the work, it must be regarded as the most plausible scheme yet proposed for connecting the valley of the Mississippi with the Pacific coast by railroad. We have labored much in behalf of the Central route, and, in some respects, would still give it the preference over all others. But we have scarcely a hope that this can be accomplished, or even commenced beyond the borders of our State for many years to come. And hence we accord our hearty approval of the efforts now being made in favor of the Southern route. Indeed, we look upon it as the most important step that can be taken to build up New Orleans as a great commercial emporium, and establish a system of commerce in the West. Nor will it be of less importance to St. Louis. For her prosperity as a commercial city depends much upon that of New Orleans. And besides, by constructing a railroad from this point in a Southwestern direction, an intersection can be made with the Southern route, which will bring St. Louis almost as near to the Pacific as New Orleans.

New Orleans, Opelousas and Great Western Railroad.

ST. LOUIS BRANCH.—SPEECH OF BUCKNER H. PAYNE, OF NEW ORLEANS, AT THE LITTLE ROCK RAILROAD CONVENTION, JULY 5, 1852.

The President and Directors of the New Orleans, Opelousas and Great Western Railroad Company, believing the facts and arguments contained in the speech

of Col. Payne, at Little Rock, are of such deep importance to the friends of internal improvements in the South, have unanimously directed its publication for general information, and respectfully invite a careful perusal of it as a document well calculated to advance railway improvements, and place them on a solid foundation in the public mind.—*Picayune.*

Mr. President and Gentlemen of the Convention—I thank you for the honor conferred upon me and those whose interests I am charged to represent in this convention for the compliment of the resolution, unanimously adopted this morning, inviting me to address you on the subject of railway improvements in general, and especially to Arkansas, if judiciously adopted by her. Permit me, however, in the first place, to discharge a duty I owe those, whose delegate I am, to lay before you their views, and respectfully to invite to them your serious consideration.

The people of Louisiana are thoroughly aroused to the value of railroad improvements in developing her resources and adding to her prosperity. They are aware that great economy may be secured in the construction of such works, and great benefits conferred on sister States, by a mutual understanding in regard to the location of their roads respectively in a manner, that may make eventually all *local* roads serve as links of State roads, and to make of *State* roads *international* roads, connecting different States together for general mutual welfare. To secure the full benefit of every dollar expended in the construction of railroads, different parishes or counties of a State must interchange friendly views as to what is best to be done, before they determine on any road. They must see the best way of connecting each road with the road of another parish or county, so that when they are all completed, they may mutually aid and sustain each other; and by this connection become State roads. A similar policy pursued by different States will secure similar, but greater advantages, by having their several works so constructed as to make, of what in the outset was but a local county road, an international road by its subsequent extension and connection. By observing this policy, no money will be wasted on roads that may hereafter become valueless from their improper location. The President and Directors of the New Orleans, Opelousas and Great Western Railroad Company, regarding the principles here advanced as salutary, have deputed me to lay them before the people of Arkansas, and to say: That this company is now organized; that they obtained in the course of a few days private subscriptions to the amount of $750,000; that they applied to the City Council of New Orleans (under a late law of Louisiana) for a subscription to be paid by taxation of one and a half million of dollars, and obtained it by a very large vote; that the parishes through which the road runs are pledged to an equal amount of tax subscription as well as private subscription, as that of the city for its construction; that they have every confidence the planters will fulfill their engagements, and which makes

the capital of means, as here stated, amount to a sum over four millions of dollars. This sum is sufficient to construct the road from Algiers, opposite the city of New Orleans, to the Texas line, at or near the thirty-second parallel of latitude; and by branch to the boundary line between Louisiana and Arkansas. The Board of Directors believe that this road, if extented through Arkansas by way of Little Rock to the Missouri line, and thence to St. Louis, the States of Louisiana, Arkansas and Missouri will be greatly benefited. The Board have some reason to believe that the city of St. Louis and people of Missouri will enter into the construction of it with enthusiasm and energy.

This proposed branch of the New Orleans, Opelousas and Great Western Railroad across the State of Arkansas, through Camden and Little Rock on its way to St. Louis, would be 238 miles long, viz: From the Louisiana line to Little Rock 120 miles; thence to the Missouri line 118 miles; making, as stated, 238 miles of road to be built by Arkansas. The country through which it will run is level, and the cost of its construction will not exceed $10,000 per mile, making the cost of the road $2,380,000. The length of a branch thrown off at the proper point to Memphis would not exceed seventy-five miles. This, at the estimated cost of your engineer, Mr. Robinson, of $12,000 per mile, will make the sum of $900,000. Another branch taken off at Camden to Fulton on Red river, a distance of fifty-six miles by Langtree's map, will cost say $560,000, as it runs through a level country. Now adding these sums together, and we have $3,840,000 as the cost of the St. Louis and New Orleans road through Arkansas, with branches to Memphis and Fulton. By this arrangement your State will be developed North and South, East and West, and in direct railway communication with St. Louis, Memphis and New Orleans.

Now let us examine the cost of the "Central Railroad" from Memphis by way of Little Rock and Fulton on Red river, to the Texas line, the road proposed to be built first by Arkansas. The distance by Langtree's map from Memphis to Little Rock is 133 miles direct, estimated by your engineer to cost $12,000 per mile, making $1,596,000. The remaining portion of the road to the Texas boundary is 144 miles. No estimate has been made of the cost of this part of the road; but from inquiry of your citizens we find the country is hilly, and resembles the country from Jackson, Mississippi, to the Tennessee line. Gentlemen who have traveled on both routes say that they are very similar, except there are one or two higher hills on the Fulton route. But assuming they are about alike, we find the engineer estimates the cost of the road from Jackson to the Tennessee line at a fraction ovor $18,000 per mile. At this rate the cost of the road from Little Rock to the Texas line will be $2,592,000. To this add the cost of the Memphis end of the road, will make the sum $4,188,000, being $348,000 more than the New Orleans and St. Louis road, with branches

to Fulton and Memphis. But as roads running through hilly land have to diverge from a right line, if we add the usual allowance for this road, it will make the Fulton end of the road twenty six miles longer, and which will add $468,000 to the cost of the Central Road, or $4,656,000 as the whole cost from Memphis to the Texas line; whereas the New Orleans and St. Louis road, with branches to Memphis and Fulton, will cost only $3,840,000. Memphis and Fulton are the two main points of the central, and they are developed by the proposed branches. But this Central Railroad gives no outlet for the mineral resources of your State. It will cost double that of the New Orleans and St. Louis road, and *it takes nothing to market.* Its effect will be, if first made, to destroy all your mineral wealth for years to come, because it will absorb all your present means for constructing railroads; and when constructed, this road will afford no outlet for your minerals, as they will not bear reshipment, transhipment nor storage. The handling of them at Memphis will cost more than they can afford to pay; and as for cotton, instead of being taken *to* market, it is actually transported further *from* market. From southern and western Arkansas it is almost as near to New Orleans by railway as it is to Memphis. The cost of railroad transportatation will be about the same to either; but the planter who ships to Memphis is 1200 miles from market, and has paid as much to get there as the ono pays to get to New Orleans. Nor are these the only objections to the construction of this Central or Memphis road first, as is contended for by some. If it is the first road made, its interests will ever be antagonistic to the construction of any other road the wants of the people of Arkansas might demand. Instead of aiding and stimulating other roads into existence as fast as possible, it would oppose the construction of the Helena and Fort Smith road, the Gaines Ferry and Fulton road, and the New Orleans, Arkansas, and St. Louis road, because these roads would take its business. That it will oppose the making of these roads is as clear a proposition as that men love to make money. But especially, if to build it resort is had to the aid of foreign capital—that is capital outside of your State. The inducement to invest money in the road is the payment of good dividends; therefore the more support the stockholders can force on the road, by preventing other roads being built, the better it is for them. And hence they are compelled by their own interest, to oppose the construction of the roads referred to, because they would take from the business of this road, and thereby destroy its profits. And the more foreign capital invested in it, the stronger the opposition. Not so, however, with the New Orleans, Arkansas and St. Louis road. The more roads and the more branches made, so much the better for it. Additional roads will only add to the value of this main road. This road entering Arkansas from Louisiana on the line of Camden, Little Rock, and thence by the most eligible route to St. Louis, opens

the trade of the West and New Orleans to Arkansas by the shortest, and consequently the cheapest route to market. In addition to this, the people of Arkansas will be placed on the line of the New Orleans and Great Pacific railway across Texas to California. Little Rock is the centre, as well as the capital of the State, and by this road will be placed in twelve hours of New Orleans. The trade of St. Louis and New Orleans, opened by this road to Arkansas, cannot be otherwise than of vast importance to her citizens. On the north it gives them all the supplies of western produce and manufactures, and opens the whole agricultural and mineral resources of the State. On the south it gives them the market of New Orleans at all seasons, without subjecting them to the cost of transhipment, reshipment or storage, and consequently the avoidance of injury from rehandling of cotton and other merchandise. It will also relieve the small planter from the necessity of selling his few bales of cotton in an inferior market, by securing to him at less expense the advantages of the best. But besides these advantages, great as they are, it will open to Arkansas *the* market, and the *only* market she can have for her mineral wealth, and which must be dead and valueless to her unless this road is made, by which they can be brought to New Orleans. Any one acquainted with the uses to which her minerals must be necessarily applied, must also know that New Orleans is her only market. Iron for heavy machinery, for steamships and boats, for manufactures, for engines, for locomotives, for railroads, &c., &c., her lead, her zinc, copper, coal, granite, marble, slate, nickel and mineral paints, &c., *all must have their market in New Orleans.* This road, therefore, is essential to Arkansas. Without it her people can have no outlet that will justify the working of these mines. Crossing all your streams, as this road would be at right angles, it secures to people the advantage of reaching it from above and below with their produce, at any time. But as the making of this New Orleans, Arkansas and St. Louis road, with its aforesaid branches, will cost from $800,000 to a $1,000,000 *less* than the "Central Railroad" from Memphis, and will better develop the resources of your State, is it not self-evident that the interests of the people of Arkansas require its construction in preference of all others? If this plan is adopted, you not only have all the advantages of the Central Railroad, and at a saving of a million of dollars in the cost, but you have none of its *antagonism* to other improvements; and your whole State is better developed in the additional inlets and outlets of St. Louis and New Orleans, and by which your mineral wealth is brought into immediate use and activity.

In reference to the means for building of this road and its branches, Arkansas will meet with fewer obstacles to raise them than she will encounter for the Central Railroad. In the first place she will not want as much money by a million of dollars. The

Central road, in a direct line, will be only 277 miles long, and cost $4,656,000, while the New Orleans, Arkansas and St. Louis road, with its branches, will be 369 miles long, in a direct line, and cost but $3,840,000!

As it runs through a level country, it will cost less to build it per mile. The means of the State, in lands and money—the aid from the General Government, and above all, the aid from your citizens by subscriptions can accomplish it without delay. Besides the President and Directors of the New Orleans, Opelousas and Great Western Railroad Company have memorialized Congress for a grant of ten miles of land, on each side of the road, to aid in its construction to St. Louis. This demand of so large a grant of land is predicated upon the fact that as the main trunk of this road is to cross the State of Texas, and for a thousand miles of it Congress cannot be called upon for an acre of land, so far as the Texas portion of it is concerned, and as this road to St. Louis through Arkansas is but a branch of the main trunk to the Pacific, it would be but an equitable grant on the part of Congress to this company for this branch road, to donate ten miles on each side as an equivalent for alternate sections of a thousand miles through Texas, where Congress cannot contribute an acre. To these considerations, if we add the reflection that New Orleans and Louisiana finishing the road up to the Arkansas line on the one side, and St. Louis and Missouri finishing on the other, will reflect a credit across the State of Arkansas, such as will enable her people to raise without difficulty the means necessary to aid her (in addition to her own) in completing the link across her own territory. She can accomplish it, and the whole international railway from New Orleans to St. Louis be established in three or four years. But lest it may be thought by some that the interests of St. Louis and New Orleans in the construction of this road are so manifest and great, that they will build it whether Arkansas contributed or not, it may be well to remark that such an assumption would be a fatal mistake. The guarantee of capital invested in such an enterprise is to be found in the *interest the State and her citizens take in it themselves.* If neither the State nor her citizens take any interest in it, how could those of other States or foreigners be expected to do so? What protection would be had in an enterprise where both the State and the people declined or refused to have anything to do with it? The idea is absurd. If this work is ever accomplished, the State of Arkansas and her citizens must take hold of it vigorously and become its most deeply interested owners. By doing so they can secure its immediate construction.

Having now laid before you, with such reasons as appeared pertinent to the case, the views of the President and Directors of the New Orleans, Opelousas and Great Western Railroad Company for the consideration of this convention and the people of Arkansas, we beg now to call attention to such facts as the history of

railroads has developed, and which we deem of vital importance to the success of railroad improvements, and should be generally known and understood by our people, and especially by the editors of our public journals.

It is known that some railroads fail of realizing what was expected from them, and the companies break. Others realize more than was anticipitated, and consequently do not break. Some railroads possess the power of adding vastly to the value of real estate or landed property through which they pass—others again do not possess this power to any great extent. Some will add greatly to the value of property at its principal terminus—others add nothing, or comparatively nothing, to the value of such property. With some railroads it is their interest to stimulate into existence other roads, and to aid in their construction, while others are opposed to the construction of any new roads, and consequently neither stimulate nor aid them. Now, the reasons for all this are to be found in a careful perusal and understanding of the history of each railroad, whether on this continent or that of Europe, and with a proper knowledge of the laws of trade.

From this brief statement it will be seen that those States, that have not as yet embarked largely in railroad improvements, should profit by the experience of the past and avoid thereby unnecessary expenditures of money. It is with this hope that we humbly submit such convictions as appear to our mind as the teachings of railroad history and experience, trusting they may elicit from others such inquiries as may establish clear results, of what is best to be done in any future case that may arise. If they will prevent one mistake, or serve to correct a single error, we shall have been paid for our labor, as our only object is to advance, as far as our humble abilities will permit, the cause of Southern Internal Improvements.

Railroad history thus teaches:

First—That all railroads beginning at any great commercial city on the seaboard never fail, if persevered in, to be good paying stock.

2. That they never fail to advance the commercial prosperity of that city.

3. That they advance the value of the landed estate or property of the city and country through which they pass from 100 to as high, in some instances, as 5000 per cent.

4. That no matter how far the road is extended, or how many branches it may have, the extension, and the branches, equally impart such value to the country developed by them.

5. That the company building such road, if properly managed, never break, nor the stock become valueless.

Witness: The railroads from Boston, New York, Charleston and Savannah, and the same in Europe.

Second.—As a general rule, all railroads not terminating on

such commercial point, nor directly connecting with one that does, fail, and the company breaks, and the stock becomes of little value.

2. That they neither build up the town they terminate in, nor do they add much, if anything, to the value of the property of the country through which they pass.

3. That the exceptions to this rule are so few, or have some special local cause to account for it, that it might almost be said to be invariable, as it is certainly generally true.

Witness: All the New England Railroads outside of Massachusetts—they broke—and their stocks became of little value until they formed connections either with Boston or New York, or both. Also the Vicksburg and Jackson, the Natchez and Jackson, the Bayou Sara and Woodville, the Port Hudson and Clinton, &c., &c., here at home are living and *dead* proofs of its truth.

Third.—That the railroads of States distant from the great commercial seabord market, but connecting with the main trunk leading to that market, are also good paying roads, and possess the power of enhancing the value of the country developed by them.

Witness: The New England roads since their connection with Boston, the Michigan, Northern Ohio, Indiana and Illinois railroads connecting with New York, &c., &c.

Fourth—That where railroads have been constructed in violation of these principles, the companies have failed, and consequently if disregarded in future they will continue to fail.

Fifth.—That this is so well understood by all bankers of any note, that roads starting from, or directly connecting with such great commercial seabord mart, receive moneyed facilities which are invariably denied now to roads where no such connection exists.

Sixth—That all transhipments, reshipments and delays from physical causes must be avoided, and the road made as direct as possible.

Seventh—That geographical and local causes, such as a wide extent of country aggregating from natural facilities the produce and merchandise upon a particular point *in the interior*, serve to make that point or city one from which railroads may radiate, and produce good effects upon the value of its property and that of the country through which they pass, if not counteracted by special local obstacles.

Eighth—That where the principles here set forth have been disregarded, the country has been retarded in its growth and prosperity, and a distaste and aversion to railroad improvements engendered in the minds of the people in consequence.

Ninth.—That, as a general rule, it may be affirmed that all railroads not connecting directly with the great seaboard market of the country fail, and the company breaks.

Tenth.—That at the first all railroads must necessarily be *local* and *sectional*, but although local and sectional,

Eleventh—That prudence demands and success requires, that, in order to obtain the greatest amount of benefit from railroads, they should be so located that their extension may bring about such connections with other roads, and other sections, as will convert *local* roads into *State* roads, and State roads into *international* and *national* roads.

Twelfth—That railroads when so constructed, starting from the great city and market where the produce seeks its sale, and the country its supplies, never fail to add to the value of the real estate of both city and country.

Having stated these premises, let us now examine the claims of the New Orleans, Opelousas and Great Western road to public consideration, with its proposed branch across the State of Arkansas to St. Louis, in Missouri.

New Orleans is the greatest market for produce now in the world, and must from her location continue to be so. It is not only the largest, but it is the best market, and will improve as such from this time steadily, until it becomes the *commanding* market of the world for all the products of our soil. For the article of cotton already has she established this supremacy, and cotton in New Orleans commands from a quarter to one-half cent per pound more than in any other market, and the same difference is maintained for it throughout Europe. Other articles of produce will be placed in the same commanding position. To place every article of importance of Western and Southern produce on the like commanding elevation, New Orleans has but one other matter to accomplish besides her railway improvements, and that other matter is to make herself the great *importing*, as she is now the greatest exporting, city of this continent. To make New Orleans the great importing city is a matter of such easy accomplishment, and will so certainly be effected, that we shall not devote a moment to its consideration at present. It is sufficient to know that it can be done, and *will be done in due time.*

Our object now, is the consideration of the New Orleans, Opelousas and Great Western Railroad, and its St. Louis branch, designed to reach the Pacific with its main trunk, and to develope the resources of the Great West by its connection with St. Louis. So far as Louisiana and New Orleans are concerned, the construction of this road to the Texas boundary and of the branch to Arkansas, the President and the Directors of the company have the means in hand or at their control to construct it as quickly as so great a work can be completed. When the road is completed to the Texas boundary, about the parallel of 32°, that State proposes to grant a sufficient quantity of land, which if prudently managed will enable the company to build the road through to El Paso, on the Rio Grande. If Texas is as liberal as her authorities say she

will be, the whole road will be under contract or finished to El Paso in five years. But it may be said, that railroads cannot be built without money, and that lands, and especially wild lands, cannot be made available for such purposes. This is evidently true. But this company having finished its road from New Orleans to the Sabine, a distance of 324 miles, can raise 3 millions of money by mortgage or otherwise, on this part of the road, which will enable them to construct and grade some 400 miles of the road into Texas. This will develope a portion of the lands granted, and create for them an immediate market; those along the road can be sold at such prices as will enable the company to complete the road to El Paso. When completed to this point, the remaining portion of the lands can be sold, and the original mortgage or loan repaid. From El Paso to San Diego, the distance by way of the road is 613 miles. This portion of the road the Congress of the United States must build, or grant to this company lands sufficient to build it. San Francisco will connect with it, at the Rio Colorado of the West, and thus the *first* connection of the Atlantic States by railroad with the Pacific will be from New Orleans. To El Paso there are no mountains to cross, but a magnificent country the whole way. From El Paso to the Pacific, on this route, there is but one mountain to cross, and that of but 604 feet elevation, in order to reach the waters of the Gila. The crossing of this mountain will be at the Gold Copper Mines, discovered by the Spaniards in 1604, and worked since 1608 to the present time.

The St. Louis branch will enter Arkansas through Union or Ashley county, by way of Little Rock, and thence to St. Louis by the most advantageous route. The distance from St. Louis to the Arkansas line is 137 miles, which that city and Missouri will build.

This statement maps to the mind the New Orleans, Opelousas and Great Western Railroad, and the present means of its successfull execution. Let us for a moment imagine it finished, for the purpose of examining some of the effects it will exert upon ourselves, and in the changes it will inevitably produce upon the commerce of the world, and our destiny as a people and nation.

By looking at the map of the United States, it will be perceived that New Orleans is the geographical and commercial seaboard centre, between the Atlantic and Pacific States. That from the crest of the Alleghanies on the east, to the crest of the Rocky Mountains on the West, and our *present* boundary on the north, there are 1,921,146 square miles, drained by the Mississippi river and its tributaries; of which New Orleans is the natural outlet and market. That the Mississippi river and its tributaries furnishes an inland navigation *over* one hundred thousand miles long. It is an old saying and true, that we can *aid* nature, but cannot reverse her laws. It is equally true, that we can aid commerce, but cannot reverse its laws. Railroads can aid commerce, and can aid the Mississippi in her natural powers in bringing the commerce of

this vast country to New Orleans; but to reverse it, *can never be accomplished*—if we are true men.

Our past and present inland and outward commerce, from the Eastern slope of the Rocky Mountains to the Atlantic and Gulf ports, has been, and yet is, principally with Europe. Whatever may have been, or now may be the amount of that commerce, it is soon to be doubled, by the commerce of Asia, through our Pacific ports. The voyage, whether by sail or steam vessels, from Europe to the United States, or from Asia to our Pacific ports, will occupy about the same time. The commerce of Europe is furnished by 270,000,000 of inhabitants; that of Asia, and which is now opening up with our Pacific commerce, will be furnished by *over seven hundred millions* of people. By looking on a map of the world, it will be seen that New Orleans is not only the geographical and commercial seaboard centre, between the Atlantic and Pacific States, but it is also the commercial centre point on which the commerce of Europe and Asia must aggregate for distribution over the world. There is no other point in our confederacy, or out of it, that possesses half the advantages in this respect as does New Orleans, and especially for the distribution of our portion of it. Nature seems to have intended this, when she made the great Valley of the Mississippi. She seems to have intended it, in giving the country east of the Rocky Mountains to the Atlantic and Gulf coast such vast superiority of soil and extent of territory over that west of those mountains to the Pacific; and by which the ascendancy of population will be forever secured to the Atlantic States. And the God of Nature, the God of our Fathers, seems to have intended the American people, with our free institutions, placed as we are on this continent, midway between Europe and Asia, to control the destinies of the world. The hundreds of millions of gold produced by California: the rapid development of our possessions in Oregon: the great increase of the whale trade in the North Pacific; an increased trade with Mexico and South America; the absolute certainty of finally crushing the Chinese walls, and overthrowing Japanese nonintercourse; and the opening of commercial relations with 700,000,000 of people who inhabit Asia, and the millions, of the islands of the Pacific; and the bringing of that commerce to New Orleans for distribution among our people and that of Europe, or for exchange for our products and manufactures, will furnish to this road, and its St. Louis branch, a transportation and business unknown to the annals of railroad prosperity on this globe. The speed of railroad cars in England has reached fifty miles per hour. We can accomplish it on this road. The distance by railway from New Orleans to the Pacific is 1,643 miles. It can be passed in thirty three hours! and from St.Louis in the same time. This renders it important that the St. Louis branch and the main trunk road should be conducted by one board of directors, connecting as it will with the Pacific trunk. This

acceleration of transit, and the perfect security of life and property, it is certain that commerce would no longer undergo the expensive, tedious and perilous voyage of months around Cape Horn, nor even that of weeks across the Isthmus of Tehuantepec or Panama, but would pass this road, and pour millions into the country, as well as the coffers of the company. The voyage from Europe to New Orleans can be performed in ten or twelve days; from New Orleans to the Pacific in a day and a half; from the Pacific ports to China in ten or twelve days more; thus performing, in twenty five days, a trip that has usually heretofore taken from five to seven months.

If the price of passage were fixed at fifty dollars to the Pacific, (only *one-seventh* of the price now charged to California,) with 150,000 passenger annually going, it would produce $7,500,000; and as many returning, would make the income of the road $15,000,000, to say nothing of other business and way travel; and the whole road would not cost over $30,000,000 to San Diego from New Orleans.

But to return to our St. Louis branch. As heretofore stated, there are certain points in the *interior*, upon which, from their local position, the produce and commerce of the country have a natural tendency to aggregate, such as Chicago, Buffalo and Cleveland, on the lakes, for the Western markets. Cincinnati, Louisville, Nashville, Memphis and St. Louis, on the Mississippi and its tributaries, with a view to the New Orleans market. Any man acquainted with the geography of our country must see from the natural position of St. Louis that she has thirty times the extent of territory whence produce must aggregate upon her, than either of the others, and to which supplies are to be distributed. New York, with all her railroads and canals, including all the commerce of the lakes and that of Ohio, Indiana and Illinois, most convenient to the New York market, together with the whole of Michigan, has only 186,500 square miles of territory whose commerce is aggregated upon that city, while St. Louis has Missouri, Iowa, Wisconsin, Nebraska, Minnesota and that part of Illinois convenient to her, together comprizing 279,959 square miles, besides the Northwest Territory, lying between Minnesota on the east, the Rocky Mountains on the west, Nebraska on the south, and the British possessions on the north, estimated to contain 725,248 square miles more. This great extent of country of a million of square miles, must, from its inland position, have some point nearer to them than the seaboard market, upon which their produce must and will be centralized; and from which their supplies of groceries and merchandise must be obtained, and *that point is St. Louis.* From her very position, in reference to the country here mentioned, and her connection by railway with New Orleans, she is destined to be the *greatest inland city of this continent.* What the trade of such a city will be, connected with

such a country and with New Orleans by railroad, is impossible to tell. We leave it for the imagination to picture. Such, however, is the place to which we wish, at the earliest moment, to see constructed a railroad from New Orleans. The travel and trade upon this road, to and from New Orleans, must surpass that of any road in the world. Besides, it is the right place for the people of the South to meet those of the free States, and exchange commodities and interchange feelings of mutual good will. There the produce of free States and slave States meet, and the only place where they can meet in a common market. But a small portion of the people of the United States travel for pleasure: they are all engaged in some profitable employment, and those who travel most are usually engaged in the purchase, transportation and sale of merchandise. Even when they travel for pleasure they like to meet with a chance of making their expenses by some investment or exchange of articles. The laws of commerce are the laws of travel—they govern and direct the travel of the age. The commerce of St. Louis will surpass that of Cincinnati, Louisville, Memphis and Nashville, all put together. It is large now, but great as it is it must be still greater; its increase is certain, it is onward and illimitable! Men traveling from the South to the West and North, whether for business or pleasure, will take the New Orleans, Opelousas and Great Western Railroad branch to St. Louis. It is one continuous line and the trip performed in twenty hours. There they meet all the vast variety of products of other latitudes; there they invest their money, and thence they ship the produce. And so it will be when coming from the North; the hope of gain even stimulates our Yankee brethren, and they will take St. Louis in their route, expecting to find in that vast storehouse (in the products of a million of square miles,) something that will pay them for the trip to the Sunny South. If any other road be taken the traveler meets with nothing to cheer him from New Orleans to Nashville but the familiar old face of a cotton bale. Where *trade aggregates* to that *place* the travel *will go* as surely as "where the carcase is, there the eagles will be gathered together." From St. Louis radiate railroads that place New Orleans in contact with fifteen millions of people of the older States, and east of the Mississippi, beside her railways west of this river, going North and West for hundreds of miles, and now in progress of construction. When at St. Louis and going North or East, the traveller has before him Nashville, Louisville, Cincinnati and Pittsburgh, Chicago, Buffalo and Cleveland. He can visit either or all without retracing a single step on his route to New York and Boston, by way of Philadelphia, or by way of the lakes. The people of Arkansas have therefore a double stimulus to take hold of this road and build their part, to wit: that of placing themselves in direct communication with two such great places of commerce as New Orleans on the one side, and St. Louis on the other.

The reason why so many railroads have failed heretofore, is because, in their location, the interests of the people, the laboring men were overlooked and the laws of commerce disregarded. The interest of labor and commerce is to have the road to go directly to the *great* mart, not to the river merely, where the people can sell nothing of what they produce. The population of Arkansas, we take it to be, like that of other Southern States—a majority of your voters consist of men who own two negroes, one negro, and no negroes at all. Now what good does it to these people to make a railroad to the Mississippi river? They are neither cotton nor sugar planters. Stern necessity requires them to labor for something to live upon. They must turn their attention, not to the cotton field, but to the corn field, for bread for their families. To the cultivation of vegetables and fruit—the production of milk and butter—the raising of poultry, pigs, sheep and calves. And what good, we ask, is a railroad running to the Mississippi river to such people? None. And yet they comprise a majority of your voters, and a still greater majority of your population. On the other hand, if you form your connection direct with New Orleans, you will see the men of whom we are speaking, enlarging the corn field and the vegetable garden—increasing the number of their calves and pigs —you will see their wives, with joy and animation, attending the dairy and the poultry yard. And why? Because they know that by so doing, the *certainty* of having enough to live upon is not only secured, but that all beyond they can sell at a market that can never be glutted. They become careful that nothing is wasted or permitted to rot on their hands, as is now the case, because they have a market for it by this railroad. Look at one of those families before such a road is made. At the end of the year they have hardly a five dollar gold piece in the world, to bless the wife with a nice dress or bonnet—they are barely able to keep soul and body together. Look at the same family after the railroad is completed to New Orleans. At the end of the year they not only have many comforts and some luxuries never had before, but the husband can dress his wife and daughters handsomely, and has four or five hundred dollars of money in his pocket. Ask that man now if he is in favor of railroads and hear his answer. Now what is true of this single family is also true of a majority of your families and of a vast majority of your people. Is not the planter's interest equally well or better served by having the road direct to New Orleans, as it is evidently this poor man's? Surely it is. Then why not take that road and build it *first*, that blesses equally all interest alike? The railroad when properly located, is emphatically the *poor man's road* as well as the rich man's. It gives a thousand fold value to his home and to his labor, morally and socially, as well as pecuniarily. When improperly located, a curse hangs over them, and their builders appear doomed to break. God's blessing hangs over improvements that bless his children

equally alike. He watches over and preserves them. More than three thousand years ago the good old patriarch Jacob dug a well in a dry and thirsty land. He drank of it himself, and his children drank of it after him. It cooled the parched tongue of the prince and the peasant—of the stranger and the wayfaring man, and God blessed it and preserved it, humble as it is, and to this day the poor man as well as the rich, as he slakes his thirst with its limpid waters, raises his hands and blesses Jacob and Jacob's God. Be you the object of blessing in this and after-generations, by building this poor as well as rich man's road.

An apology is due for the length of these remarks. That apology is, that the principles laid down are best illustrated by facts, which are to be found in the thousands of pages of railroad history and reports written since they came into use, and which may not be accessible to all. They are so numerous and so scattered that few can get them to examine, and if bad, many would not have the time to devote to their examination. Our object has been to contribute something towards the formation of a sound, healthy public sentiment in relation to railroads—one that will sustain all properly located roads, and at the same time put down all *speculative* ones, as we feel assured that our people can have no interest in sustaining such as will not prove beneficial, or those of which the companies will break.

DEPARTMENT OF COMMERCE.

EXPORTS OF COTTON GOODS.

The following tables, with the accompanying remarks, which we copy from De Bow's Review, (except some slight corrections of our own,) afford encouragement to the manufacturers of coarse fabrics in the Southern States. It will be seen from the figures in the second table that the value of cotton goods exported from the United States in 1851 was more than fifty per cent. over the amount exported in the preceding year, and we are informed that the increase for the fiscal year just closed will be quite as large as that of 1851. This affords strong proof that the growers of the raw material can, if they will persevere for a few years, drive the coarse fabrics of Great Britain out of all the foreign markets. If we can do this, it will compensate, in a good degree, for our consumption of the finer fabrics of that country. We trust the rapid increase in the export of Domestic cotton goods will encourage the people of the South to increase their machinery until they secure the control of the fabric as well as of the raw material.

EXPORTS OF DOMESTIC COTTON GOODS FROM THE UNITED STATES.

To—	1833.	1846.	1850.	1851.
Asia	13,360	259,614	278,776	60,900
Africa	35,551	149,149	146,300	545,296
China	215,497	813,606	1,203,997	1,894,418
Chili	369,704	981,981	594,691	855,684
Brazil	261,640	477,864	533,187	656,417
Mexico	931,151	73,817	304,678	111,541
Hayti	20,750	52,274	264,992	296,051
British East Indies	37,214	77,575	311,265	320,906
Buenos Ayres	160,888	9,666	169,892	88,792
Cuba	42,871	37,808	24,421	25,741
Texas	.....	59,298	.....	.....
Canada, &c	.....	.....	202,761	1,057,343
All other	443,888	583,830	537,060	1,163,525

The returns from Boston and New York, of the quantity exported this year, as compared with last, will indicate that the value will reach $10,000,000 for 1852.

The aggregate value has nearly tripled since 1833, showing a greater ratio of increase than the exports of Great Britain, which from a value of £18,486,401 in 1833, reached an export value of £30,089,000 in 1851. But it would seem to be the case that the exports of the New England States increase as the quantity of cotton taken declines, notwithstanding the fact that many raw materials which enter into the manufacturing are exposed here to taxes, which the British manufacturers do not have to pay. The remarkable impulse which has been given to the foreign sales of domestic goods may be seen in the following table, from official sources, of the export of cotton goods from the rival manufacturers of Great Britain and the United States, and the bales of cotton consumed in each country for several different years:

	UNITED STATES.		GREAT BRITAIN.	
	Bales Consumed.	Value Exp.	Bal. Consum.	Val. Exp's.
1833	194,412	$2,532,517	877,589	£18,486,401
1835	216,888	2,858,681	937,616	20,513,586
1838	246,063	3,678,755	1,265,116	24,550,375
1842	267,850	2,970,690	1,221,693	25,999,478
1844	346,744	2,898,880	1,427,482	25,831,586
1845	389,006	4,327,928	1,577,617	26,119,321
1846	422,597	3,545,481	1,561,232	25,610,693
1847	427,967	4,082,532	1,142,008	24,472,936
1848	531,772	5,718,205	1,508,291	23,339,000
1849	518,039	4,933,129	1,586,606	26,890,000
1850	487,769	4,734,424	1,513,007	28,252,700
1851	404,108	7,241,205	1,664,575	30,089,000

The manufacture in the United States has, in the period embraced in the table, increased 212,000 bales, and the export has increased but $4,708,688. In Great Britain the consumption has doubled, yet the export has increased in a less ratio. It would seem, nearly all the increase of her manufactures is for export.

It will be observed that in the table of "bales consumed" is given only the cotton taken by the manufacturers from the ports, and does not embrace the annually increasing quantities sent to the factories of the interior from plantations. It will now be observed that the average official value of cotton in 1850 was 11¼ cents, and in 1851, 12 cents. At this rate, the bales in the last year were worth $48, and in the former $45 each. On this basis the results are as follow:

	Bales used.	Value.	Value Exp. Goods.
1850.....	487,269	$21,948,605	4,734,424
1851.....	404,108	19,397,184	7,241,205
Decrease	83,661	$2,551,421	———
Increase	———	———	2,506,781

This great change in the direction of goods would indicate the extent to which the coarser descriptions are supplied from the factories of the South and West, and to which those of the Atlantic States, so supplanted, find markets abroad. It is probably the case that the diminished purchases of cotton in the last ten years resulted less from decreased actual consumption than from using up stocks, which are now apparently being replaced by the large purchases which the cotton returns indicate. California has opened a fair market, but the whole of Asia, including China and the British and Dutch East Indies, take increased quantities. The consumption of United States cotton in Canada, during the past year, is however, the most pleasing indication of New England progress, in competition with the English. The removal of the duties on the raw material will give a still greater advantage to the trade in this direction.

COMMERCE OF NEW YORK.

From the Merchants' Magazine.

IMPORTS ENTERED AT NEW YORK FROM FOREIGN PORTS FOR THE FISCAL YEAR ENDING JUNE 30TH, 1852, COMPARED WITH THE PREVIOUS YEAR.

	Entered for consumption.	Entered warehouse.	Free Goods.	Specie.	Total.	Withdrawn from warehouse.	Total thrown on market.
July	$12,374,701	$1,022.725	$1,027,481	$81,143	$14,506,050	$1,167,644	$14,650,969
August	11,279,004	1,358,089	638,334	186,503	13,461·930	1,252,245	13,356,086
September	8,384,172	864.916	366,153	115,550	9,730,791	1,669,304	10,535,179
October	5,790,795	1,204,994	1,558,720	23,165	8,577,674	1,602,436	8,975,116
November	4,399.085	938,056	415,838	218,473	5,971,452	1,377,100	6,410,496
December	5,073,162	1,050,185	575,601	25,376	6,724,324	1,117,456	6,791,595
January	8,854,311	1,281.594	1,041,456	104,736	11,012,097	1,584,652	11,315,155
February	7,024,952	1,003,383	1,110,949	110,293	9,249.577	1,788,997	10,035,191
March	9,302,024	916,519	1,843,938	525,421	12,587.902	1,605,849	13,277,232
April	8,410,448	732,422	1,496,449	327,400	10,966,719	1,255,429	11,489,726
May	6,096,996	453,109	789,046	380,584	7,719,735	1,380,371	8,646,997
June	7,626,181	640,722	1,062,947	429,747	9,759,597	911,479	10,030,354
Total	$94,345,831	$11,466,714	$11,926,912	$2,528,391	$120,267,848	$16,712,962	$125,514,096
Do. 1850—1851	107,559,164	14,802,824	8,321,042	10,390,501	141,073,531	12,201,313	138,472,020

The falling off in the imports of merchandise, as shown above, has been more than half of it in dry goods, divided between woolen, cotton, silk, and linen fabrics, all of which have been received in smaller amounts. Miscellaneous dry goods, including embroideries, artificial flowers, gloves, matting, &c., show a slight increase, as will be seen by the following comparative summary :—

Foreign Dry goods entered at the port of New York for the Fiscal year.

Goods.	1850–51.	1851–52.	Difference.
Manuf. of wool	$17,067,031	$14,388,565	Decrease $2,678,466
" cotton	11,671,500	9,982,547	" 1,688,953
" silk	24,858,850	22,319,951	" 2,538,899
" flax	7,058,731	6,346,259	" 712,472
Miscell. dry g.	3,957,635	4,103,740	Increase 226,105
Total.....	$64,613,747	$57,221,062	$7,393,685

But a small portion of this decrease occurred during the first 6 months of the fiscal year, that is, from July to December, inclusive: much the greater portion having accrued since the first of January:—

	1850–51.	1851–52.	Decrease.
First 6 m's., July to Dec.	$31,731,481	$29,964,465	$1,767,016
Last 6 m's., Jan. to June	32,882,266	27,256,597	5,625,669
	$64,613,747	$57,221,062	$7,392,685

The falling off in the imports has resulted in a corresponding decrease in the receipts of duties, amounting at the port of New York to a decline of $2,991,284 93 from the preceding year.

EXPORTS OF NEW YORK.

While the imports at the port, where more than three-fifths of the whole revenue is received, have thus declined, the exports have been without material change. The shipments of specie from New York to foreign ports have increased $10,650,972, and of foreign free goods, $389,825; while domestic produce, exclusive of specie, has fallen off $8,643,221, and foreign dutiable goods, $1,162,958; leaving a net increase over the preceding fiscal year of $1,233,-825. The decline in the exports of domestic produce occurred previous to the 1st of January; for the last six months the shipments were $24,478,521, against $24,488,201 for the corresponding period of 1851, being a difference of only $10,000. We annex a monthly statement for the entire fiscal year, with a comparsion of the totals for the last two years:—

Exports from New York to foreign ports for the fiscal year ending June 30, 1852.

	Domestic Produce.	Foreign dutiable.	Foreign free.	Specie.	Total.
July	$3,188,027	$248,397	$2,311	$6,004,170	$9,478,905
August	3,259,594	334,549	22,974	2,673,444	6,290,561
September	2,593,986	316,047	134,271	3,490,142	6,534,446
October	2,702,382	358,292	106,626	1,779,707	4,947,007
November	2,451,511	397,597	62,368	5,033,996	7,945,472
December	2,512,436	351,428	21,918	5,668,235	8,554,017
January	2,419,296	358,244	26,693	2,868,958	5,673,191
February	3,352,943	322,272	93,932	3,551,543	7,320,690
March	4,313,245	357,230	100,557	6 41,994	5,383,026
April	4,244,044	353,262	67,719	200,266	4,865,291
May	4,249,924	545.973	106,818	1,834,893	6,737,608
June	3,566,369	482,594	125,500	3,556,355	7,730,818
Total	$38,853,757	$4,461,885	$871,687	$37,273,703	$81,461,032
Do. 1850—1851	47,496,978	5,624,843	482,655	26,622,731	80,227,207

Deposits and coinage of gold at the United States mints for the month of June, 1852.

	NEW ORLEANS.		PHILADELPHIA.	
	From California.	Total.	From California.	Total.
Gold	$258,795	$379,092	$6,580,000	$6,687,000
Silver	1,479	9,497	20,000	27,400
Total	$260,284	$388,589	$6,600,000	$6,714,400

GOLD COINAGE.

	Pieces.	Value.	Pieces.	Value.
Double eagles	11,000	$220,000	168,170	$3,363,400
Eagles	.....	.....	22,630	226,300
Half eagles	.....	.....	41,633	208.165
Quarter eagles	20,000	50,000	97,670	244,175
Gold dollars	.....	.....	227,875	227,875
Total gold coinage	31,000	$270,000	557,978	$4,269,915

SILVER COINAGE.

Half dollars	20,000	$10,000	.....	.....
Dimes	150,000	15,000	105,000	$10,500
Half-dimes	260,000	13,000	.....	.....
Three-cent pieces	.....	.....	1,850,700	55,521
Total silver coinage	430,000	$38,000	1,955,700	$66,021

COPPER COINAGE.

Cents	.....	.....	936,788	$9,367
Total coinage	461,000	$308,000	3,450,466	$4,345,303

The total deposits for coinage at our mints of California gold, since its discovery to date, amount to nearly $130,000,000; and the total *production* of the California mines may be safely estimated at $200,000,000.

EXPORTS OF CANADA BY SEA FROM 1844 TO 1850 INCLUSIVE.

From the Railroad Journal.

Date	Timber. Feet.	Timber. Pieces.	Flour barrels.	Wheat bushels.	Ashes barrels.	Barley.	Pease.	Ships.	Tons.
1844			415,467	282,183	35,743	63,735	130,350	1,439	500,777
1845	24,133,000	3,529,274	442,228	296,252	30,916	27,626	220,912	1,699	628,389
1846	23,471,200	2,468,067	555,602	534,757	26,011	6,287	216,339	1,699	623,791
1847	17,690,720	3,399,529	651,030	628,001	19,243	23,012	119,252	1,444	542,505
1848	17,778,080	2,846,891	383,593	238,051	18,282	3,000	88,365	1,350	494,247
1849	18,441,160	2,901,271	321,790	72,289	25,896	1,321	118,951	1,328	302,513
1850	19,497,720	2,821,363	280,678	81,951	55,620	3,489	292,229	1,341	485,905

EXPORTS OF CANADA TO THE UNITED STATES.

Date.	White pine feet.	Sawn lumber feet.	Flour.	Wheat.	Ashes.	Barley.	Pease.	Oats.
1848	685,330	58,140,027	277,044	297,011	7,718	11,156	27,561	43,234
1849	939,782	102,788,908	168,635	928,980	11,332	26,060	72,183	4,864
1850	1,869,160	121,366,940	369,761	1,213,078	21,700	63,025	36,672	657,839

STATISTICS OF POPULATION, &c.

From the Merchants' Magazine.

Deaf, dumb, blind, insane and idiotic population of the U. S.

TABULAR STATEMENT OF DEAF AND DUMB, BLIND, INSANE, IDIOTIC, RETURNED BY THE SEVENTH CENSUS OF THE UNITED STATES.

States and Territories.	Deaf & dumb.	Blind.	Insane.	Idiotic.
Maine	230	201	536	558
New Hampshire	163	136	385	352
Vermont	144	138	552	281
Massachusetts	529	497	1,647	791
Rhode Island	64	64	252	107
Connecticut	389	192	462	300
New York	1,307	1272	2,580	1,739
New Jersey	203	213	386	426
Pennsylvania	1,225	829	1,891	1,448
Delaware	58	46	70	101
Maryland	254	307	553	393
District of Columbia	19	23	22	11
Virginia	711	996	1,026	1,285
North Carolina	407	532	491	774
South Carolina	145	222	204	295
Georgia	252	309	306	577
Florida	22	26	8	37
Alabama	211	308	245	505
Mississippi	108	217	149	210
Louisiana	128	218	208	173
Texas	58	76	41	108
Arkansas	89	81	63	102
Tennessee	377	468	478	854
Kentucky	539	530	507	849
Ohio	947	665	1,352	1,399
Michigan	122	122	136	190
Indiana	518	349	579	919
Illinois	475	257	249	371
Missouri	259	211	282	333
Iowa	51	47	40	93
Wisconsin	65	50	48	77
California	6	...	2	3
Minnesota	...	...	...	1
Oregon	...	...	4	4
Utah	...	2	3	2
New Mexico	28	98	11	38
Total	10,103	9702	15,768	15,706

POPULATION IN FRANCE.

From the Merchants' Magazine.

From the official report published in the Paris "Moniteur" of the 14th ult., we learn that the population of France in 1851, was 35,781,821. In France the census is taken every five years, and we may refer to the last eight enumerations as the best possible indication of the progress of the country during the half century:—

Population.	Increase.	Population.	Increase.
1801...27,349,003	.....	1836...33,540,910	971,687
1806...29,107,425	1,758,422	1841...34,240,178	689,268
1821...30,461,875	1,354,450	1846...35,400,486	1,170,308
1831...32,569,223	2,107,348	1851...35,781,821	381,335

The great falling off in the ratio of increase during the last five years, is no doubt attributable, partly to the political troubles which have driven so many French citizens abroad, and partly to the ravages of the cholera in 1849. But the births during 1846 and 1851 exceeded the deaths to the number of 512,000, so that the decrease must chiefly have been owing to emigration. One department, Les Basses Pyrenees, has lost 11,000 inhabitants by this cause alone.

STATISTICS OF BRITISH EMIGRANT VESSELS.

From the Merchants' Magazine.

A very interesting return to the British House of Commons has been printed, showing the number of passenger ships which have sailed from ports in the United Kingdom with emigrants on board during the last five years, distinguishing the ports under the superintendence of an emigration office, and showing the number of such ships which have been wrecked, or destroyed at sea, and the number of lives so lost. It appears that from 1847 to 1851 inclusive, the number of emigrant vessels that sailed from ports in the United Kingdom was 7,129, of which 252 were chartered by the Colonial Land and Emigration Commissioner, of which there was only one wreck. The per centage of loss was .396, or 1 in 252. Of ships dispatched from ports under the superintendence of government emigration offices there were 5,964, out of which there were 30 wrecks, and the per centage of loss was .503, or 1 in 199. There were 913 dispatched from ports not under the superintendence of government emigration offices, of which there were 13 wrecks, and the loss was 1.42 per centage, or 1 in 70. In the 7,129 ships which sailed in the five years there were 1,494,044 passengers. The number of lives lost by shipwreck was 1,043. The per centage of loss was .069 or 1 in 1432. No lives were lost by the ships chartered by the Emigration Commissioners.

POPULATION OF THE CANADAS.

The result of the late population returns has been published. From it we learn that, for the first time, the population of Upper exceeds that of Lower Canada. The Upper Province has increased more rapidly in population within the last four years, than in any similar period which preceded it, with the single exception of the four years between 1830 and 1834, a time of extraordinary emigration:—

1824	151,097	1839	407,515
1830	210,437	1841	465,357
1832	261,060	1842	486,055
1834	320,593	1848	723,292
1836	372,502	1852	950,530

If the ten years from 1841 to the end of 1851, the population was considerably more than doubled, while during the same period, that of the neighboring Union only increased a little more than a third.

The population of the Lower Province is announced by the Quebec "Canadien" at 904,782, a much larger number than was expected, which leaves a majority to Upper Canada of only 45,748. The Lower Province, during the last eight years, has been advancing faster than ever before, as will be seen by the following statement:—

1825	423,680	1844	690,782
1831	511,919	1832	904,782

Great as this is, the same period of eight years has enlarged the population of Upper Canada far more:—

Upper Canada.		Lower Canada.	
1844.	1852.	1844.	1852.
560,000	950,530	690,772	904,782

Montreal.—Ville Marie, now called Montreal, had on the

17th May,	1642	40 to 45 souls.
	1659	25 to 30 families.
	1677	1,500 to 1,600 souls.
Per census	1720	3,000 souls.
"	1759	4,000 "
"	1765	7,000 "
"	1805	9,020 "
"	1831	27,297 "
"	1835	31,193 "
"	1842	40,464 "
"	1852	57,715 "

(*Montreal Pilot.*)

LITERARY DEPARTMENT.

Conspiracy of Pontiac.

History of the Conspiracy of Pontiac and the War of the North American Tribes against the English Colonies after the Conquest of Canada. By FRANCIS PARKMAN, Boston, 1851.

There is no event connected with the history of the North American Indians, marked with such ability, and conducted with such persevering daring on their part, as the Conspiracy, as it is rather insolently termed, of Pontiac against the British, in 1762.

It was indeed a heroic and manly combination of the northwestern tribes against their most offensive and dangerous enemies; and they had as much right to enter into it, as any other nation or tribe on the earth. They were made by the God of Indians, as well as white men, independent of both the French and the English and possessed all the rights of war and peace, which their more civilized conquerors alternately claimed exclusively for each other. For fifteen months, from May 1762 to August 1763, Pontiac, at the head of the Indians of the Northwest, kept the British garrison at Detroit, beleaguered in defiance of all the power and influence, which the British government, fresh from the conquest of Canada, could bring to bear on that, then remote, point—now, only a stage in the great current of travelling between the eastern and western frontiers of this republic. From Mackinaw to Presque d'Isle, including Saint Joseph on Lake Michigan, and Sandusky on Lake Erie, the British garrisons were captured by the Indians. Fort Pitt and Detroit only withstood the storm. Never since the colonization of North America by the whites, were more barbarities perpetrated by the Indians, than in this most fearful combination. Henry tells us, in his interesting Travels, that while concealed in a garret, whither he had fled for concealment during the Indian massacre at Fort Michillimackinac, he saw some of the fiendish orgies of that terrible scene. "The dead were scalped and mangled; the dying were writhing and shrieking under the unsatiated knife and tomahawk; and from the bodies of some ripped open, their butchers were drinking the blood, snatched up in the hollow of joined hands, and quaffed amid shouts of rage and victory." At Detroit the same savage fate overtook the prisoners taken by the Indians from the British. "The heart of Major Campbell, the second in command, is said to have been eaten by his murderers, to make them courageous." P. 261. He had gone on the invitation of Pontiac as ambassador to make peace. Happily for humanity, these cannibal rites have, in a great measure, if not entirely ceased with our Indians. No instances of them occurred during our Indian hostilities in the war of 1812, or subsequently.

But that prisoners were burnt—their entrails devoured, during our early conflicts with the Indians, is matter of mournful notoriety.

It is this most interesting period of colonial warfare with the aborigines, spreading from Michillimackinac to Fort Pitt, and from Green Bay to Niagara, that this work undertakes to portray; and most skilfully has its purpose been achieved. No work has come within the knowledge of the writer, (and he has read and studied every book he could meet with on the history of the western frontiers of the United States) that presents western events, and particularly the traits of Indian character, so truthfully, and yet with an interest so lively and ardent. It is evidently a work written *con amore*, with all the zeal of a warm heart, assisted by careful, skilful and laborious investigation. No sources of information at home or abroad have been neglected—all, everything has been consulted, to exhibit a full and faithful account.

The author with a devotion worthy of a missionary of the church, spent some time in 1846, among various primitive tribes of the Rocky Mountains; and was for a time domesticated in a village of the western Dahcotah, on the high plains between Mount Laramie and the range of the Medecine Bow.

The Indian character has never been so faithfully and elegantly delineated, as by this author. It has none of the abstract, closet air of so many learned treatises; it breathes the fresh atmosphere of the forest.

But it is time that something was said more particularly about the subject of this work. It is the story of British defeat and conquest under Braddock and Bouquet, Forbes, Amherst and Wolfe with our own beloved Washington. The author has gathered every flower, and even the cypress over many and distant fields, some of mournful and bloody defeat and massacre, others of triumphant renown and glory. It is eminently an American story in which the prowess of our Starke, Putnam, Dalzell, Rogers are prominently displayed by the side of Gladwyn, the heroic defender of Detroit, at the head of their brave and hardy countrymen. The ways of the forest, its dangers, its precautions, the arts of the native red man, the great lines of savage intercourse over the wide wilderness from Montreal to New Orleans, are most engagingly narrated. The story is too long and too various for minutiæ in this sketch, but its outlines shall be attempted so far as the great Ottowa chief is concerned.

After the brilliant success of Amherst and Wolfe, on the 12th of September, 1760, Major Rogers was ordered by Gen. Jeffrey Amherst to ascend the Lakes with a detachment of rangers, our own New Hampshire boys, and to take possession of Detroit, Michillimackinac and other western ports, included in the capitulation of the French of all Canada to the British, on the 8th of September, 1760. On the 7th of November following, Rogers reached the mouth of Cayahoga river, the present site of Cleveland on

Lake Erie. Soon after the arrival of the Rangers, a party of Indian chiefs and warriors entered the camp. They proclaimed themselves an embassy from *Pontiac*, ruler of all that country, and directed in his name that the English should advance no further until they had an interview with the great chief who was already close at hand.

Before the day closed Pontiac himself appeared, and for the first time is distinctly exhibited in the history of the country as a great commanding chief. Yet he is said to have commanded the Ottowas at the bloody defeat of Braddock, and was certainly highly distinguished by the Marquis Montcalm, and honored by the French officers. The chief haughtily demanded of Rogers, what was his business in that country, and how he dared enter it without his permission. "The British told him of the conquest of Canada and defeat of the French by his countrymen, and that he was sent to take possession of Detroit, and make a general peace to white men and Indians alike." Pontiac listened with attention; but only replied that he would stand in the path of the English until morning. In the morning, after a night of fearful anticipations, Pontiac made his appearance, and informed the British officer, that he was willing, he said, to suffer them to remain in his country, so long as they treated him with due respect and deference. The British detachment proceeded on its way to the western end of Lake Erie; where, but for the powerful interference of the great Ottowa chief, it would have been attacked by a body of 400 warriors lying in ambush, at the mouth of the river Detroit. By the influence of Pontiac the British were permitted to proceed on their way to Detroit without molestation; they arrived there on the 29th of November, 1760. During the next season, the remote posts at Michillimackinac, Sainte Marie, at the mouth of Lake Superior, and Green Bay were taken possession of by the English troops. The whole northwestern portion of North America, which had been claimed and partially possessed by the French, *appeared* to be in the undisputed power of the British, with the exception of the old forts at Vincennes or St. Vincents, Ouatanou on the Wabash, and Fort Chartres on the Mississippi. There no English forces could yet dare to venture.

The remotest dependencies of Canada towards the North to the Spanish possessions on the Gulf of Mexico, and from the Atlantic *almost* to the Mississippi, seemed to all appearances under the government of the British. Yet, throughout these vast regions, there were deep and ominous causes of estrangement and hostility at work, to shake, if not subvert the British dominion, over the Bourbon provinces of Florida and Canada. The French had been indefatigable in winning the good graces of the native tribes; not only by the solemn and imposing rites of a splendid worship; but by the most skilful adaptation to Indian manners. In this latter respect, they have always exceeded both British and Americans.

Our most capable and influential interpreters between the Indians and the whites have ever been Frenchmen. Both British and Americans are too eager to occupy and reduce by agricultural labor, the favorite hunting grounds of the Indian, to admit of any permanent peace or harmony. The one are the worshippers of the forest, the other its insatiable enemy. The conflicting state and interests of the hunter and the farmer, are too directly opposed to each other, to suffer any arbitrament but the bloody one of arms. This is the history of the two conditions of society on the Eastern continent, as much as on our own. To these radical causes of animosity are to be added the insulting arrogance and insolent airs of superiority, which so much characterize the deportment of both these people to the proud and warlike children of the forest. Perhaps our own countrymen are more censurable in this respect than the British; yet, the latter people have not been distinguished by remarkable habits of sympathy with foreigners; not even with the people of the remoter portions of their own insular empire. But these were not the only causes of resentment; the passions engendered by the old French wars, in which the Indians of the Northwest (always excepting the six nations) had so disastrously to the British settlements cooperated, still rankled between these new friends. To this was added a system of new economy and retrenchment by the British, aggravated by occasional peculation of public officers employed about Indian intercourse. These combined causes provoked the temper of the Indians to madness. Pontiac, an old French partizan, who is said to have headed the Ottowas at Braddock's defeat, no doubt shared in all these feelings of animosity to the British. He skilfully availed himself of them, to form the most formidable combinations of Indians known to the history of the two races in North America.

The first steps of this confederacy seem to have been taken in the summer of 1761; but this attempt was "nipped in the bud" by timely precaution. Again in the summer of 1762 similar attempts on the part of the Indians were detected and suppressed. "They were but the precursors of the tempest." Among so many incensed barbarian tribes, all equally smarting under the same causes of animosity, it is difficult to assign his proper part to any one tribe or chief in particular. The Delawares and Senecas were the most incensed; and Kiashuta, chief of the latter, was perhaps foremost to apply the torch. But a greater chief was wanting, whose comprehensive mind could take into one view all the perils and precautions of the crisis,—could master and direct the irregular and loose combinations of independent tribes to one object and with united energies. This chief seems, by the universal consent of both enemies and friends at the time, to have been Pontiac, or Pondiac, as he is sometimes called; without his commanding genius, this third outbreak of the Indians against the British, might have had similar results with its predecessors.

This chief was the principal one of the Ottowas, a tribe bound in friendship to the Ojibwas and the Pottawattomies, dwelling on the western shores of Lake Huron. "Over those around him (Pontiac) his authority was almost undisputed. His influence was great among all the nations of the Illinois country, while from the sources of the Ohio to those of the Mississippi, and indeed, to the furthest boundaries of the wide spread Algonquin race, his name was known and respected." (P. 161.) The character of this eminent native chief is worthy of extract. "Among all the wild tribes of the continent, personal merit is indispensable to gaining or preserving dignity. Courage, resolution, wisdom, address and eloquence are sure passports to distinction. With all these Pontiac was preeminently endowed, and it was chiefly to them, urged to their highest activity by a vehement ambition, that he owed his greatness. His intellect was strong and capacious. He possessed commanding energy and force of mind, and in subtilty and craft could match the best of his wily race. But though capable of acts of lofty magnanimity, he was a thorough savage with a wider range of intellect than those around him, but sharing all their passions and prejudices, their fierceness and treachery. Yet his faults were the faults of his race; and they can not eclipse his nobler qualities, the great powers and heroic virtues of his mind. His memory is still cherished among the remnants of many Algonquin tribes, and the celebrated Tecumseh adopted him for his model, proving himself no unworthy imitator." P. 162. Pontiac was now (1763) about fifty years old. Here a foot-note of the author presents itself so refreshing to the curious among the citizens of Saint Louis, and more particularly to the numerous and respected descendants of our historic family—the Chouteaus, the compeers of St. Ange and La Clede, that the writer can not resist its selection. "The venerable PierreChouteau of St.Louis," now no more amongst us, ,,remembered to have seen Pontiac a few days before the death of the latter, attired in the complete uniform of a French officer, which had been given to him by the Marquis Montcalm not long before the battle on the Plains of Abraham. P. 163. The account was confirmed by Monsieur Pascal L. Cerré, also, alas, no longer amongst us, whose father had been well acquainted with Pontiac. Is it not something worthy of remembrance, that the ancient village of Saint Louis was once honored by the presence of this great native chief? But more, it was afterwards his tomb.

(To be continued.)

Spirit of the Philosophical Works

of

FREDERICK HENRY JACOBI.

Fragments.

Philosophy is an internal life.—A philosophical life is a collected life. By *true* philosophy the soul becomes calm, finally devotional.

To ascend the stream of existence and of perception even to its fountain, is the troublesome task of the philosopher.

The origin of philosophy is derived from *meditation.* Reflection is a return to the beginning. He, who is conscious of every step taken in meditation from the beginning, and then retrospectively surveys the whole line of his life, has discovered a philosophy.

Because man finds himself in contradiction with himself, therefore he philosophizes. In countless ways, he loses the *coherence* of his truths, *i. e.* they come to him, one after another in controversy, they mutually exterminate themselves. Here the law of the stronger presents itself. But the strength of one truth is not the strength of another, they have not one and the same power.—Truth is brightness.—The question in controversy is, what is positively absolute in the higher and highest sphere? To one man it appears to be this, to another that. Yes, in the same man, this may be positive to-day, to-morrow that.—When this often occurs, then the whole understanding of man comes to confusion; he finds no place on which he can stand invincibly.

It is a strange pretence, that man seeks the truth wholly disinterestedly. Man seeks it disinterestedly, as one may say of an animal, that it seeks its food disinterestedly, only according to an impulse. Man seeks truth, because untruth kills him, afterwards, because he seeks a basis for his best feelings and wishes, he goes to the source of goodness, of beauty, of truth, and of life.

What means: man shall seek the truth only for its own sake, and offer up all things to the truth? Is it a command of intuition, or does he see something after which he strives?—The aim of phi-

losophy, says one, is only self-understanding. So it appears in the case of reflexion. But its source is from a controversy that springs up within us, because we *see double*, because we have wished again to enjoy a truth which was once our own. We hunt around us after the truth, which flew from us. *An original mere impertinent curiosity does not produce it, but an original interest well may.*—We find ourselves in the truth, and *only gradually discover, that we do not fully comprehend it.*

MUSINGS OF A CONVERT.

Extract from a letter.

*** Religion, then, as the roots of the word import, is a *binding back*, a regeneration of the heart, the heart having wandered away from its first love, and lost the image that was originally impressed upon it. That original image was one of love and righteousness, which was and is the image of the Creator. The spirit of hatred and sinfulness instilled in man by the evil one, deformed and debased its beauty.

Therefore, it is necessary to renounce this evil one, with all his insidious insinuations, and believe in *Christ's atonement for sins past*, and without controversy great is this mystery, great because it is so superhuman, so sublime, the greatest mystery ever revealed from heaven, and which Angels cannot comprehend; but into the incomprehensible love which occasioned it, it is said they daily desire to look; and I doubt not, it will be the subject of the greatest delight, study and wonder of Eternity. And now we come to a point, where many clear-headed men, and some who seem to have strong feelings of humanity in their hearts, turn skeptics. They turn the weapons of their reason, imagination and feelings against the faith in it, and they charge upon a believer, that it is hypocritical to pretend to believe what one does not understand; that on the basis of such a principle, because they could not understand confusion, they must therefore deify it, and that when error and truth are tangled together apparently indissolubly, one must therefore have none the less devotion of faith in the compound; and they even go so far as to say, that good and evil are and should be objects of indifference, except so far as they produce a *visible* blessing or unhappiness on mankind. How bright their formality! How dark their spirituality! Now these persons, although they seem to be clear headed and good hearted, yet, after

all, their whole argument but proves, that both their heads and hearts are blinded. The reason of this charge is plain—it is this: out of two mysteries they choose the most mysterious; when compelled to believe in one of two propositions, they cling to the most unintelligible and incomprehensible, yes, more than this, between a saving and its antagonistic principle, they reject the saving one, and embrace the destroying; and when doubts arise (I mean on points of regenerating faith), they have a hankering after the greatest doubt; when light, and darkness fall on an object of faith, a doctrine, it is almost amusing to see with what avidity they rush into the darkness, and with an infatuation, destitute of even the reason of an *ignis fatuus* delusion they pant with all the wild impulses of their unnaturally natural heart, for darker darkness still; and they will not even look into or upon the *light* of the doctrine, the grace, the beauty, the harmony of the spirit of truth, which is there manifested, and which makes all things manifest and plain.

Reason, imagination and feeling, by their own mutual action and experience with the world, educated, refined, exalted, and purely exercised, convince and convert us to the above conclusion, although beyond these there exists still a far higher and stronger evidence of its truth. In Holy Writ it is declared: "They love darkness better than light." And again it is therein declared, that "they will not come into the light." And these are the skeptics, infamous as famous, instead of shining, they are darkling stars of the truth; pretending to a perfect freedom against God, they are bound like the meanest slave, every day of their life, by his law; are sustained solely by his mercy and his bounteous hand; they are in *comparison* with him, though not *in fact*, as mere insects to the earth, in which they live and move, and have their being; but yet, the lofty spirit of the law declares, we must distinguish between their errors and themselves, must rebuke the one and love the other, and therefore to be charitable towards them, and to do them justice, one ought, yet it requires a wonderful elevation of soul, to entertain a pity and compassion for them, as doubtless the Angles do, and that, on account of their erring, not by virtue, (as is the popular delusion,) of the clearness of their mind, and the virtue which they call humanity, (but as is the truth in reality) in spite of those endowments, for which they are *indebted to God*, and although independent and high-minded as they are, they *repudiate their debts*.

Excuse me, for dwelling so long on skeptics.—But they and their sentiments have been almost as great stumbling blocks in my way, as false professors, and as I had never before disposed of them, from my mind, you will excuse me for having done so through this letter, for I write down just what I think, and feel i. e. believe. I desire to renounce their sentiments, as I have vowed to renounce the devil, as the sentiments of the one are the sentiments of the other, and as he is the spirit of evil, rebel against Heaven, the flattering denyer, that poisons the human heart with the blind desire for error, deifying the individual self, and always promising, on earth as originally in Eden, that if one breaks the law, he will become more exalted in his scale of existence, in mind more gifted with knowledge, in body more capable of happiness; and as the sentiments of the skeptic are certainly allied with those of the spirit of evil, pretending to perfect freedom and happiness *in defiance* of the deity, when perfect freedom and happiness can be obtained only *by compliance*, and in conformity with what is right, which is the will, that is the law of God.

Therefore, I say, I have desired to eradicate their sentiments from my heart, and renounce and banish them from my mind. Reason purely exercised and HolyWrit harmonize in the conclusion that there is in human beings a spirit of evil impelling one way, and that directly against the dictates of another spirit which, if not always in, is at all events always all around human beings; and as the dictates of that other spirit are consciousnesses of right, and as it intimates or whispers with a "still small voice," that the right way is the true way, is the happy way, and after some steps are taken in accordance with its dictates, experience adds her voice and the conviction becomes more strongly impressed upon the mind, that the right way is in reality the way of pleasantness and peace; then certainly this other spirit, which is the good spirit, exists in man, and when man has once entertained it, he knows it, for the communion which man holds with the good spirit, in the way of life, produces a calm and heavenly frame, possesses certain lines, colors, features, forms and expressions of individuality which are as unmistakable as physical forms of intimate friends. * * *

(CONTINUATION IN NEXT NUMBER.)

ADVERTISING DEPARTMENT.

Stationery.

F. SCHUSTER & CO.—Stock of German, English, French, &c. Books, Engravings, Blank Books, Music Paper and Stationery, No. 38 Walnut street, corner of Second street. St. Louis, Mo.
August, 1851.

Trunks.

M. PENDZINSKI, Premium Trunk Maker. Constantly on hand, at wholesale and retail, and made to order at the shortest notice, Hard Leather Trunks, Solid Leather Steel Spring Trunks, Valises, Carpet Bags, Packing Trunks, Ladies' Dress Boxes, &c.

Trunks repaired in the best manner. Call and examine for yourselves before buying elsewhere, as I am determined to sell as low as any house in the trade, at all risks, No. 42 North Second street [Westside,] between Chestnut and Pine streets, May, 1851.

A. B. LATHROP. J. W. MITCHELL.
L. G. JEGFERS.
A. B. LATHROP & Co.

MANUFACTURERS and wholesale and retail dealers in TRUNKS, Valises, Carpet Bags, Umbrellas, Ladies' Satchels, Dress and Bonnet Boxes, &c.

☞Constantly on hand at *Eastern Prices* (for CASH,) the largest assortment of Packing Trunks, Canvas or Leather, suitable for packing Prints, Clothing or Fancy Articles, Boots and Shoes, &c. Also—Manufacturers of all kinds of Packing Boxes for the city trade. Depot and Office No. 60 Third street, at the "Trunk Emporium" opposite Old Theatre, St. Louis, Mo. April, 1851.

Architects.

BEN. SMITH, Surveyor and Engineer. Surveys made with accuracy and despatch in any part of the city or country; also, Maps constructed, and Plans and Estimates made for Rail, Plank and other roads. Orders respectfully solicited. Office: North-west corner Third and Chestnut streets, St. Louis.
May, 1851.

Flowers.

FLORA GARDEN.—This establishment contains a collection of Plants and Flowers not excelled perha s by any in the United States. Of ROSES alone there are 230 varieties; and the proprietor has devoted ten years to storing his HOT-HOUSES, 420 feet in length, with specimens of rare and beautiful plants, and flowers from almost every part of the globe. The Garden is pleasantly situated on South Seventh street and affords a delightful retreat from the noise and dust of the city. A commodious SALOON has been fitted up and will be supplied with confectionary, ice creams, and other refreshments suitable to the season and the place. Spirituous liquors are excluded from the premises. Boquets of the richest flowers and most tasteful combination furnished throughout every season of the year.
April, 1851. G. GOEBEL.

Mathematical Instruments.

J. BLATTNER, Mathematical and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 58 North Second street, between Pine and Olive, St. Louis, Mo., manufactures, and has always on hand: Surveyor's Compasses, Levelling Instrument, Theodolite Pocket Compasses, S y-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, hydrometers for acids and salts, Magic Lanterns, Electrical Machines, &c., also, Surgical and Dental Instruments; Pocket, Dissecting, Cupping and self-injecting cases; Taylor's Shears, all sizes; Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; large Scales and Weights for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flaks, Game Bags, &c. ☞All the above Instruments repaired at short notice in the best manner.

Hardware.

WILSON & BROTHERS, Wholesale Dealers in Hardware, corner of Main and Olive streets, St. Louis, Mo.

P. WONDERLY, Manufacturer of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper ettles, Well and Cistern Pumps, and every other article in his line of business. No. 233 Main street, South-east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

Hats.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE & CO., Manufacturers and wholesale dealers in Hats, Caps and Straw Goods, No. 1:0 Main st., St. Louis, Mo.

Saddlery.

HEWITT & STEINACKER, Saddle, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis.

Furniture.

WM. M. HARLOW, proprietor of the St. Louis Furniture Store, manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, will o w ware, &c.

Also, ma ufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Slate Yard.

JOHN M. CANNON, Slater, No. 15 and 17 South Sixth street, St. Louis, would respectfully inform the public that, having now completed his arrangements, he is prepared to make contracts for any work in his line. He has in his employ practical slaters, and is well prepared to execute in a workmanlike manner, and with dispatch, all orders entrusted to his care. He keeps constantly on hand, and for sale, Welch slate, rich tiles, sheet lead, slate flagging, slate hearths, copper, brass and iron slating nails, Rosendale cement, and all other articles pertaining to his business. He will strip from roofs zinc, sheet iron, tin, or other covering, and substitute therefor slate. Slate removed from one roof, can be used to advantage on another, which is not the case with any other roofing material. His terms are such as cannot but prove satisfactory. Apply as above.

Brushes.

F. DINGS & CO., importers of German, French and English Fancy Goods, and manufacturers of all kinds of brushes, No. 47 Main street, St. Louis, Mo.

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JONATHAN JONES' COMMERCIAL COLLEGE, St. Louis, Mo., incorporated by the General Assembly, January 24, 1849. With full authority to "grant diplomas, award degrees, confer honors, and exercise all and singular, the privileges common to Commercial Colleges, authorized by law in other States."—Charter, Sec. 2.

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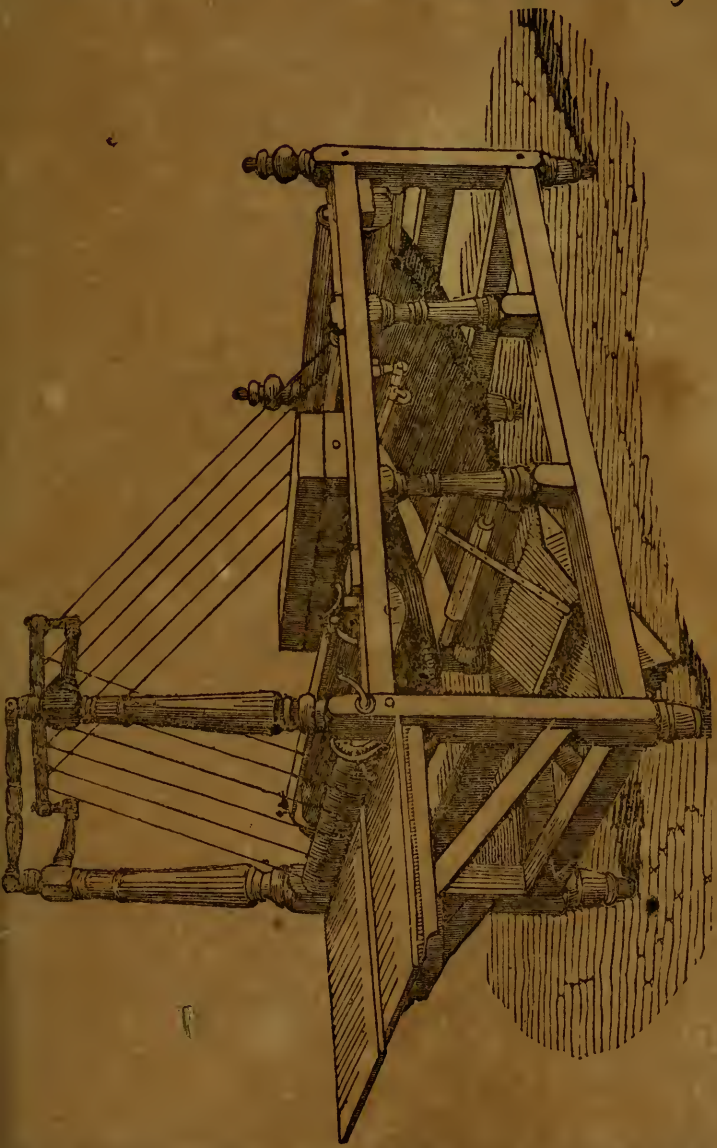

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LIV.

VOL. VIII. SEPTEMBER, 1852. NO. 6.

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THE

WESTERN JOURNAL

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Civilian.

M. TARVER & H. COBB, Editors and Proprietors.

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VOL. VIII. September, 1852. No. VI.

ARTICLE I.

Knowledge, the Source of Happiness.

"WHAT IS TRUTH?"

Having recently discussed the relation between ignorance and crime, and shown by facts which we deem sufficient to convince the unprejudiced reader that the former is the principal cause of the latter,* we now propose to inquire how far the happiness of individuals is affected by this fruitful source of evil. It requires but little intelligence to comprehend the nature of the penalties annexed to the transgression of human laws. The prison, the instruments of punishment, and the place of execution, are palpable objects; and their relation to disobedience of legal enactments is obvious to all. But the penalties consequent upon the nonobservance of the laws of our individual existence, as intelligent and moral beings, though not less certain than the fiat of Deity, are perceived and appreciated by none but the truly wise. The laws of physical health and of moral enjoyments are stamped upon man's nature, engraved upon his heart, and continually proclaim his duty to himself; yet, he comprehends them not, or comprehending neglects to obey, because judgment is not executed speedily upon the disobedient.

Ignorance of these laws, and of the relations between cause and effect exposes the human family to disease in a thousand forms which cut off the larger portion of the race before they arrive at that period when man is most useful to himself and to his species. Those who fall are borne to their resting-places, and the survivors, nothing profiting by their untimely removal, continue to live on in disobedience,

NOTE.—Lest we should weary our readers with subjects relating to the practical economy of the country, we have, for the sake of variety, selected a chapter from our manuscripts, written some years ago, which we have changed in some respects with a view to its application to certain subjects now claiming the attention of the public.—*Senior Editor.*

* Vide page 297.

until they likewise suffer the penalty of violated laws, and fall, the victims of ignorance.

Hence, also, the prejudices which forestal reason, and stultify the judgment; hence vain and vicious desires which conflict with the social welfare, making man the adversary of his brother, and filling his heart with distrust and inquietude. And hence superstition and fanaticism, those awful scourges of the race, which rob humanity of its highest and holiest attributes, sending man forth, possessed with the qualities of a fiend, to deluge the earth with blood.

But it is objected by some that education does not protect mankind against these and other evils of like nature, and when we have appealed to individuals for their countenance and support in behalf of a system of public instruction, they have pointed to the vices of the learned, and contrasting them with the virtues of the ignorant, declare their conviction that education is a source of corruption rather than of improvement. And although we cannot admit the truth of this conclusion, yet we have cause to regret that men do not advance in wisdom and virtue in a degree commensurate with their opportunities for the attainment of knowledge. That such is the fact, cannot be denied. But it is not because they are incapable of advancement in virtue, and in that knowledge which enlarges their capacity for moral enjoyments. The fault is in a defective system of instruction which, looking chiefly to the cultivation of the intellect, by exercising the mind in the study of physical science and abstract doctrines in morals and religion, neglects the improvement of the moral nature—the test of truth and the source of human wisdom.

Without calling in question the truth of doctrines taught in the schools, it may be affirmed that the mode of instruction does not present the individual man, and the relations which he sustains to society and to the author of his being, in a light calculated to afford comprehensive and consistent views to the mind of the student.

The desire for knowledge is a property of man's nature, but owing to the limited range of individual observation, much the greater part of that which is attainable in early life is acquired through the report of others; and regarding these reports as truths, he adopts them as the basis of his reasoning, and though subsequent observation may cause him to doubt, yet few possess the courage or industry to investigate the truth of that which was taught them in the days of their youth. And thus error is transmitted from one generation to another until it claims the sanction and reverence of mankind upon the ground of its antiquity.

Truth is an attribute of speech, and consists in a right conception of facts and principles correctly conveyed by one individual to the un-

derstanding of another. But when we reflect on the fallible nature of the mediums through which it is transmitted, we are admonished of the danger of placing implicit confidence in the observations and report of others, and hence it is the duty of all men to investigate for themselves whatsoever relates to their own well-being.

It is worthy of observation that, in an age when physical science which is based upon uniform and permanent laws, is steadily and rapidly progressing, the science of morals should remain stationary, and in some respects, even exhibit signs of decay. Accustomed to the demonstration of physical laws and the properties of matter, one might suppose that men would be led into a closer investigation of those principles which affect their individual happiness as intellectual and moral beings. In pursuing this investigation, they would find the facts as well authenticated, and the laws to which they relate as obvious and not less uniform and permanent than those relating to physical science. Nor are the tests of truth in this case less certain than those which demonstrate the laws of matter. Neither is man indifferent to this subject; for the desire of happiness is an inherent property of his nature continually prompting him to action, and when disappointed in the pursuit, and even when despairing of its attainment, the desire remains unabated, and only ceases when the mental faculties fail to perform their functions. Why, then, do mankind remain in ignorance of those laws, the observance whereof is essential to the attainment of happiness? This is a great moral problem, and were we to hazard an answer, we should say that it was owing to the want of proper instruction.

Man was endowed by the Creator with two natures whose instincts and desires are opposed to each other, and yet, under the guidance of reason, they are made to operate conjointly in promoting the well-being and happiness of the individual. Self-preservation is the first law of nature, and in conformity with this principle it is just that the wants of the individual should be supplied before administering to the necessities of others. But man cannot live alone and perpetuate his race; and hence the social or moral principle inclines him to devote a reasonable portion of his time and means to social purposes.

The desires springing from these respective natures, though true to their objects, were not designed, except in cases of emergency, as guides of human conduct. Both are subject to the control of reason which sits in judgment upon their respective demands, and decides according to the lights which it has received through the medium of the senses. Though in other respects antagonistic, yet the desire of happiness is common to both natures, and it would be unphilosophical to affirm that the judgment would not, in all cases, conform to the best

interests of the individual, provided all the facts touching the subject under consideration, were known and properly considered. And, the will being subject to the judgment, the actions of men would conform to the laws of their being, and harmony, social love and divine adoration would reign throughout the earth.

But where, in the process of reasoning, important facts—as a law of nature—relating to the subject under consideration are unknown, or, if facts be assumed which have no existence, the judgment must be erroneous, and the action which proceeds from it detrimental to both individual and social happiness. There is less danger of being misled by reasoning from a few facts, well understood, in cases where others relating to the subject are totally unknown, than from an unwarrantable assumption of facts which do not exist. And upon investigation, it will be found that the greater part of the evils which afflict mankind, may be traced to a misconception or an unwarrantable assumption of facts in the process of reasoning. We need only look into the street, and take the first individual that meets the eye, as an instance. There goes a man who is compelled to labor for the subsistence of himself and family. Enter into conversation with him, and you will discover that he regards labor as a curse imposed upon the human family; he has arrived at the conclusion that a majority of mankind regard wealth as the test of respectability; he believes that he is degraded by his condition in the estimation of the community in which he lives, and that wealth, no matter how obtained, would make him respectable and happy. Miserable man! laboring, as he deems, under a curse imposed by the Creator, and contemned, as he supposes, by men, how is it possible that he can love the former, or sympathize with the latter? It is scarcely necessary to observe that his conclusions are drawn from an unwarrantable assumption of facts, and that a large part of the human family reason from the same premises. Volumes might be filled with a bare recital of the evils which flow from the shortsighted and false views of the economy of man's physical and moral nature; but we leave to the reader the task of tracing them out for himself. Again, there goes an individual who has separated himself from the world, and become a member of a church, by the rules whereof he is restrained from indulging in certain vices that are supposed to be tolerated by the community at large. He talks of the sacrifices that he has made to the cause of religion; believes himself despised and persecuted, and deems it his duty to despise what he calls wordly objects, lest they should take too strong a hold upon his affections. Deluded man! How can he enjoy the comforts of religion, so long as he regards the vices of bad men as

sources of pleasure, or how can he adore the Creator with all his heart, while he contemns a part of his works?

The laws impressed by the Creator in the beginning upon all his works must remain unchanged forever; and it would be calling in question his justice and benevolence to suppose man incapable of comprehending the nature of those laws, so far as they relate to his own happiness. For without knowledge there can be no obedience; and yet, we know that in our present state of existence the ignorant are not exempt from the penalties annexed to the non-observance of natural laws. The personification of these laws, and regarding their sanctions in the light of a direct interposition of an offended Deity, prevent mankind from observing the sequences between cause and effect, and may justly be regarded as the principal source of the barbarous rites and superstitions that have afflicted the nations of the earth from the creation to the present time. Besides, these views are calculated to degrade the idea of Deity in the minds of men by making Him the subject of passions similar to their own. But it is asked: how are these laws manifested, and what the tests by which they are known? They are written by the Creator upon all his works, and manifested to man through all his senses, they are very nigh unto him, in his mouth and in his heart, and unhappily for mankind, are continually recognized in the fruits of disobedience. They are known by the emotions of love which they excite towards both God and man; by our perception of their harmony with the attributes of Deity; by their tendency to elevate the condition, and promote the happiness of the human family; by their conformity with the word of revelation. These are some of the tests of moral and religious truths. And we commend them to the attention of all men who assume the responsible office of teaching others, while we respectfully admonish those who are in search of light, to reject all doctrine which does not come up to this standard, though it should be declared by one from the spirit land.

We are persuaded that it is owing to radical defects in the manner of presenting moral and religious truths to the minds of men, that the fruits of christianity have been so slowly developed, and that new systems of religious faith receive so much encouragement. It is difficult to convince the human mind that happiness in this world is inconsistent with a state of blessedness in a future; and if the doctrines of christianity are not so taught as to promote the happiness of individuals here, it is but natural that they should be attracted by any system, no matter how absurd and degrading, that promises future happiness, while it allows the indulgence of the passions and grosser appetites during their present state of existence. We would not lower the standard of moral excellence, but aim to elevate it by cultivating

a refined taste for the enjoyment of all things calculated to afford pleasure to the mind, that the hearts of men might rejoice and abound in gratitude to the Creator for his benevolence.

The destinies of the race are, under Providence, in the hands of those to whom the instruction of youth is committed; and while discoveries and improvements are being made in every other pursuit, will they rest satisfied with a system which is obviously too narrow for the attainment of that high degree of moral and religious refinement, which is necessary to develope those excellencies of man's nature so long obscured by the mists of ignorance ?

The economy of man's being, and his relations to every object of sense present a wide field for the investigation of the philosopher, which would yield abundant fruit, if cultivated with skill and diligence. These investigations are calculated to place the wisdom and benevolence of the Creator in a clearer light, than they have heretofore been viewed by the mass of mankind; to harmonize the discordant doctrines which have confused and distracted the human mind from the beginning; to clothe deformity with the mantle of beauty, and give man a foretaste of a higher state of existence; to bring social enjoyments and reason to the support of religious faith, and prepare man for the change that awaits him.

The volume of revelation is complete; but the truths which it contains remain unexplored. Moral, like physical science is progressive, and the former, especially, cannot remain stationary; it must advance or decline. If new views of moral beauty and excellence are not continually presented to the human mind, it creates systems for itself, woven from the entangled thread of its own vain imaginings. And the moral phenomena of the age should admonish the friends of moral and religious truth, that extraordinary diligence and exertion are necessary on their part to preserve mankind from the influence of false and presumptuous teachers. The cause of humanity invokes their aid, and a sure reward awaits the performance of their duty.

ARTICLE II.

(From Hunt's Merchants' Magazine.)

Ericsson's Caloric Engine.

One hundred and twenty years before the Christian era, a wheel, driven by a jet of steam, revolved in the Egyptian capital. More than nineteen centuries succeeded, marking their deep furrows upon the broad face of creation, before this whirling toy ri-

pened into the mighty Steam Engine, now so familiar to our race. During this vast period of time, sixty generations of men were born, and lived, and garnered for eternity. Of all the millions composing these generations, no man had appeared ingenious enough to drive pistons to and fro with that vapor, which had turned the playful wheel in Alexandria. That which now seems to have been its obvious application, nearly two thousand years were consumed in finding out. It required but a cylinder, a piston to move within it, grasping a crank, and with but few and simple contrivances beyond, the steam-engine was complete. That power which had created a rotary motion, could produce a reciprocating motion. To establish this neither experiment nor scientific learning was necessary; and if these had been required, both could have been abundantly supplied. Great geniuses had appeared, and scattered their rich gifts among men, and had passed away; failing to accomplish that which Watt finally completed. Human skill had multiplied luxuries, human invention had created innumerable comforts; but still mankind were as destitute of a Motive Power as when the Israelites journeyed from Egypt. At the end of the eighteenth century this power appeared. At length it assumed a form which enabled it to drag heavy burdens upon land and sea; and then, as the grim monster blew its hot breath from its iron lungs, the globe seemed contracted to half its former size.

In strength it was mightier than any moving thing, and in speed it rivaled the birds of heaven. It has become the strong carrier and the fleet racer. Glowing fires are its food, and its sinews hot vapor. Its unearthly shriek troubles the air, and its rolling tramp shakes the earth. It impels huge ships over wide seas; defying the hurricane and mastering the storm. It digs the ore, blows the furnace, wields the heavy hammer, and turns the spindle. It toils in the workshop; it toils in mid ocean, and it toils as it bounds along upon its iron track, unchecked by its ponderous train. It has traversed mighty waters, walked upon dark and troubled seas, darted through tunneled mountains, and coursed along western wilds.

Its years have been few. The nineteenth century dawned upon its early infancy, and the first half of that century closed upon its gigantic manhood. In this short period of time, it has stamped new and everlasting characters upon the history of mankind. It has accomplished a grand, and we believe its final destiny. We think its end is at hand, its mission nearly over. If it has been a useful slave, it has also been a costly and dangerous one.

To prevent this danger, the most watchful care, the profoundest skill, have proved unavailing. If the slaughter of our race, caused by its bursting boilers could be presented to view, humanity would stand appalled. Its course has been marked and its onward track strewn with mangled bodies. Of this the press, day by day, tells an awful story.

It is time that this fierce and expensive, though mighty bond-servant, should be replaced by one equally powerful, cheaper and less dangerous. The age is ripe for this change. The experience of the last few years has determined that steam cannot be profitably used, for commercial purposes, upon the ocean. For a voyage of three thousand miles, a large portion of the freighting capacity of the ship is required for coals alone. These, with the engine and huge boilers, occupy a part at least of that space, which should be filled with merchandise. The expense of the coal consumed is enormous; but this could be borne if it occupied less room. In proportion as the voyage is extended, does steam, as a motive power, become more expensive; until finally, the entire ship would be insufficient to contain the fuel necessary to feed the engine. A steamer of the Collins line consumes, we are informed, about one thousand tons of coal for a voyage of three thousand miles. Double this distance, and although the cost of the coal is but doubled, nearly the entire freighting room of the steamer is absorbed by it, and her power to earn freight is gone. Still increase this distance, with no means to supply fuel upon the route, and steam machinery becomes worse than useless. The broad Pacific cannot be traversed by it. Its rich commerce invites the merchant ship, and rewards the navigator, but the steamer must hug its shores, and cannot profitably explore its ample bosom. It is the mission of man to hold the earth and its waters in subjection by machinery. By machinery he is destined to lighten the drudgery which at the dawn of creation fell upon his race. To accomplish this he has been endowed with genius and inventive power; and where the force of a thousand giants would be fruitless, these triumphantly prevail. They gave to the world steam as a motive power. It has proved inadequate to the wants of men, destructive to human life, and more costly than the interests of commerce can sustain.

A new motive power is demanded, and if the eyesight and the judgment can be relied upon, it has appeared. It is the most sublime development of force ever seen in machinery! It is exerted by that life-giving, elastic fluid, the atmosphere. It is drawn from that vast magazine through which the lightnings play, and is supplied from that unseen element which sighs in the breeze and roars in the hurricane. We are not intimately acquainted with machinery, nor are we altogether ignorant of the principles of mechanical science. We know enough of both to form an intelligent judgment concerning the wonderful machine to which we allude, and which we have carefully examined. It is not, like most new inventions, presented in a mere model. It does not, like most new inventions, rest in bare experiment. Were these its conditions, the "Merchants' Magazine" would express no judgment concerning its utility, nor indulge in any speculations as to its supposed value. We should leave this task to those who are supposed to be better acquainted with the science of mechanics, and with the practical

value of untried inventions, than the editor of a commercial journal. We are not here called upon to perform this task.

A celebrated painter has said: "Let my productions be subjected to the judgment of the whole world, but heaven deliver me from that of my own profession." This may not, in a majority of cases, prove to be a just apprehension; but it is quite certain that there is in every profession a conservative spirit, which clings to the knowledge of the past, and distrusts that which is new and untried. This is strikingly illustrated in the case of the steam-engine.

We all know that, at this time, the only mode in use for producing a rotary motion, from the reciprocating motion of the piston of a steam-engine, is by means of a crank. It is equally well known, that to enable the stationary engine to "pass the center," a ponderous fly-wheel is employed. Now it will hardly be credited, that both these methods were at first condemned by distinguished engineers, as utterly impracticable. In 1777 Mr. Stewart read a paper before the Royal Society in London, describing a method for obtaining a continued circular motion, for turning all kinds of mills, from the reciprocating motion of the steam-engine. This he proposed to effect by means of a complicated contrivance, which practice soon proved to be worthless. In the course of his remarks, he incidentally noticed the method of obtaining the circular motion by means of a crank, which, said he, "*occurs naturally in theory, but in practice would be impossible.*"

This paper was, by the council of the Society, referred to Mr. Smeaton, one of the most distinguished engineers of that age. He not only condemned the crank, but the fly-wheel also; and, in consequence of these views, very complicated and expensive means were adopted, to produce the desired rotary motion from the reciprocating motion of the piston, until, at length, from necessity, the crank and fly-wheel were adopted, and ever afterwards used.

We have mentioned these circumstances to show the wisdom of the course pursued by Captain Ericsson, in not subjecting his invention to public examination, until he could present it in a shape so conclusive, as to satisfy the judgment of practical men, and to trample down that carping, sneering criticism, with which envy and rivalry sometimes seek to strangle the productions of inspired genius. This, in our opinion, he has accomplished. We have, with great care, examined this machine; the principles and construction of which were fully explained to us by the distinguished inventor. It is alike remarkable for sublimity of conception and simplicity of detail. Like the forces of nature, its operations, although mighty, are gentle. Two machines upon this plan are now in operation at the works of Messrs. Hogg & Delamater—one of five horse, the other of sixty horse power.

The latter is the most extraordinary piece of machinery we have ever seen. It has four cylinders. Two, of seventy-two inches in

diameter, stand side by side. Over each of these is placed one much smaller. With'n these are pistons, exactly fitting their respective cylinders, and so connected that those within the lower and upper cylinders move together. Under the bottom of each of the lower cylinders a fire is applied. No other furnaces are employed. Neither boilers nor water are used. The lower is called the working cylinder; the upper the supply cylinder. As the piston in the supply cylinder moves down, valves placed in its top open, and it becomes filled with cold air. As the piston rises within it, these valves close, and the air within, unable to escape as it came, passes through another set of valves, into a receiver, from whence it is to pass into the working cylinder, to force up the working piston within it. As it leaves the receiver to perform this duty, it passes through what is called the regenerator, which we shall soon explain, where it becomes heated to about four hundred and fifty degrees, and upon entering the working cylinder, it is further heated by the fire underneath. We have said the working cylinder is much larger in diameter than the supply cylinder. Let us, for the sake of illustration merely, suppose it to contain double the area. The cold air which entered the upper cylinder will, therefore, but half fill the lower one. In the course of its passage to the latter, however, we have said that it passes through a regenerator, and let us suppose, that as it enters the working cylinder, it has become heated to about four hundred and eighty degrees. At this temperature, atmospheric air expands to double its volume. The same atmospheric air, therefore, which was contained within the supply cylinder, is now capable of filling one of twice its size. With this enlarged capacity, it enters the working cylinder.

We will further suppose the area of the piston within this cylinder to contain a thousand square inches, and the area of the piston in the supply cylinder above, to contain but five hundred. The air presses upon this with a mean force, we will suppose, of about eleven pounds to each square inch; or in other words, with a weight of 5,500 pounds. Upon the surface of the lower piston, the heated air is, however, pressing upwards with a like force upon each of its one thousand square inches; or in other words, with a force of 11,000 pounds. Here, then, is a force which, after overcoming the weight above, leaves a surplus of 5,500 pounds, if we make no allowance for friction. This surplus furnishes the working power of the engine. It will be readily seen that after one stroke of its pistons is made, it will continue to work with this force, so long as sufficient heat is supplied to expand the air in the working cylinder to the extent stated; for so long as the area of the lower piston is greater than that of the upper, and a like pressure is upon every square inch of each, so long will the greater piston push forward the smaller, as a two-pound weight upon one end of a balance will be quite sure to bear down one pound placed upon the other. We need hardly say that after the air in the working cy-

linder has forced up the piston within it, a valve opens, and as it passes out, the pistons, by force of gravity, descend, and cold air again rushes into, and fills the supply cylinder, as we have before described. In this manner the two cylinders are alternately supplied and discharged, causing the pistons in each to play up and down, substantially as they do in the steam-engine.

We trust our readers will be able, from the brief description we have here attempted, to understand at least the general principles upon which this machine operates. Its cylinders draw their supply from the atmosphere. The cylinders of the steam-engine are supplied by scalding vapor, drawn from hissing boilers. The caloric engine draws into its iron lungs, the same element which expands those of the most delicate child, and derives its motion and its power from that sustaining source upon which depends the existence of all animate life.

We have endeavored to explain the construction of the caloric engine. Its most striking feature consists in what is called by its inventor, the regenerator. Before describing this, we will present the grand idea upon which it is based. First let it be remembered that the power of the steam-engine depends upon the heat employed to produce steam within its boilers. It will be seen that from the very nature of steam the heat required to produce it, amounting to about 1,200°, is entirely lost by condensation the moment it has once exerted its force upon the piston. If, instead of being so lost, all the heat used in creating the steam employed could, at the moment of condensation, be reconveyed to the furnace, there again to aid in producing steam in the boilers, but a very little fuel would be necessary; none, in fact, except just enough to supply the heat lost by radiation. The reason is obvious. Let us suppose the steam has passed from the boiler, has entered the cylinder, has driven the piston forward, and is about to pass into the condenser, there to change its form, and be again converted into water. This steam, yet in the cylinder, and uncondensed, possesses all the heat it contained before passing out of the boiler. It has driven the piston forward, but in that effort it has lost no heat. That source of power it still contains.

Let it be supposed that the heat contained in the steam could, at the moment it is converted into water within the condenser, be saved, and by some device be again used to create steam from water within the boiler, with what exceeding cheapness could the power of the steam-engine be employed. But it is quite impossible thus to re-employ the heat of steam: it cannot thus be saved; and hence every effort to economize in this manner would be unavailing.

The propositions we have here advanced were, it appears, more than twenty-five years since familiar to the scientific mind of Capt. Ericsson. He was at that early period deeply impressed with their importance; and regarding heat as the sole source of motive-power,

was anxious to discover some element in which it could be so employed that, after giving motion to machinery, it should be returned to act over and over again for the same purpose. But little reflection was necessary to convince him that steam was not this element. It must consist of some permanent gas, and atmospheric air seemed admirably adapted to the purpose. Accordingly it was employed by him.

In a work entitled "A Dictionary of the Arts of Life and Civilization," published in London in 1833, the author, Sir Richard Phillips, mentions an engine which Captain Ericsson then had in operation in that city, as "his application of excited or rarefied air to the performance of those powers of machinery, which hitherto have been made to depend on the intervention of boiling water and its steam." The author further states that he "has, with inexpressible delight, seen the first model machine, of five horse-power, at work. With a handful of fuel applied to the very sensible medium of atmospheric air, and a most ingenious disposition of its differential powers, he beheld a resulting action, in narrow compass, capable of extension to as great forces as ever can be wielded or used by man."

The author adds:—"The principle of this new engine consists in this: that the heat which is required to give motion to the engine at the commencement, is returned by a peculiar process of transfer, and thereby made to act over and over again, instead of being, as in the steam-engine, thrown into a condenser, or into the atmosphere, as so much waste fuel."

During the last nineteen years, Captain Ericsson has employed much of his time, and expended large amounts of money, in overcoming those practical difficulties which are ever stumbling blocks in the way leading to the successful development of a great principle in new machinery. This he has now achieved. The principle of his invention, as stated by Sir Richard Phillips, is still retained, embodied in that practical and complete form, which render this engine economical, absolutely safe, durable, simple in construction, and in action effective.

Let us now attempt to describe the regenerator, to which we have referred. Without this, the machine we examined would possess, in point of economy, no advantage over the best constructed steam-engine. With it, the advantages are incalculable. We have already fully illustrated the leading idea conceived by Capt. Ericsson, of employing heat over and over again. To attain this is the object of the regenerator.

For the purpose of understanding this instrument, our readers will bear in mind the construction and operation of the machine. We have before stated that atmospheric air is first drawn into the supply cylinder, from whence it is forced into a receiver, and that from this it proceeds towards the working cylinder, before reaching which it passes through the regenerator. This structure is com-

posed of wire net, somewhat like that used in the manufacture of sieves, placed side by side, until the series attain a thickness, say of twelve inches. Through the almost innumerable cells, formed by the intersection of these wires, the air must pass, on its way to the working cylinder. In passing through these, it is so minutely subdivided that the particles composing it are brought into close contact with the metal which forms the wires. Now let us suppose, what actually takes place, that the side of the regenerator nearest the working cylinder is heated to a high temperature. Through this heated substance the air must pass before entering the cylinder, and in effecting this passage, it takes up, as is demonstrated by the thermometer, about 450° of the 480° of heat required, as we before stated, to double its volume. The additional 30° are communicated by the fire beneath the cylinder. The air has thus become expanded; it forces the piston upward; it has done its work —valves open—and the imprisoned air, heated to 480°, passes from the cylinder, and again enters the regenerator, through which it must pass before leaving the machine. We have said that the side of this instrument nearest the working cylinder is hot, and it should be here stated that the other side is kept cool, by the action upon it of the air entering in the opposite direction at each upstroke of the pistons. Consequently, as the air from the working cylinder passes out, the wires absorb its heat so effectually that, when it leaves the regenerator, it has been robbed of it all, except about 30°. In other words, as the air passes into the working cylinder it gradually receives from the regenerator about 450° of heat; and as it passes out, this is returned to the wires, and is thus used over and over, the only purpose of the fires beneath the cylinders being to supply the 30° of heat we have mentioned, and that which is lost by radiation and expansion. Extraordinary as this statement may seem, it is nevertheless incontrovertibly proved by the thermometer to be quite true.

When physical causes, productive of unexpected mechanical results, are carefully examined, they will always be found adequate to effect what, upon a cursory view might appear marvelous or incredible. Thus, after an examination of the reasons why this compact regenerator so effectually absorbs and transmits heat, its operation will cease to create wonder, although it cannot fail to excite profound admiration. We will state the causes of its efficiency.

The regenerator, contained in the sixty-horse engine we have examined, measures twenty-six inches in hight and width internally. Each disc of wire composing it contains 676 superficial inches, and the net has ten meshes to the inch. Each superficial inch, therefore, contains 100 meshes, which, multiplied by 676, give 67,600 meshes in each disc, and as 200 discs are employed, it follows that the regenerator contains 13,520,000 meshes, and consequently, as there are as many small spaces between the discs

as there are meshes, we find that the air within is distributed in about 27,000,000 minute cells. Hence, it is evident, that nearly every particle of the whole volume of air, in passing through the regenerator, is brought into very close contact wrth a surface of metal, which heats and cools alternately. The extent of this surface, when accurately estimated, almost surpasses belief.

The wire contained in each disc is 1,140 feet long, and that contained in the regenerator is consequently 228,000 feet, or 41½ miles in length, the superficial measurement of which is equal to the entire surface of four steam-boilers, each forty feet long, and four feet in diameter; and yet the regenerator, presenting this great amount of heating surface, is only about two feet cube—less than $\frac{1}{1920}$ of the bulk of these four boilers.

Involved in this wonderful process, of the transfer and retransfer of heat, is a discovery, which justly ranks as one of the most remarkable ever made in physical science. Its author, Captain Ericsson, long since ascertained, and upon this is based the sublimest feature of his caloric-engine, that atmospheric air and other permanent gases, in passing through a distance of only six inches, in the fiftieth part of a second of time, are capable of acquiring, or parting with, upward of four hundred degrees of heat. He has been first to discover this marvelous property of caloric, without which, atmospheric air could not be effectively employed as a motive-power. The reason is obvious. Until expanded by heat, it can exert no force upon the piston. If much time were required to effect this, the movement of the piston would necessarily be so slow as to render the machine inefficient. Captain Ericsson has demonstrated, however, that heat may be communicated to, and expansion effected in, atmospheric air, with almost electric speed; and that it is, therefore, eminently adapted to give the greatest desirable rapidity of motion to all kinds of machinery.

We here close our imperfect description of a machine destined, as we believe, to work a revolution in the Commerce of the globe. It consumes but a very small proportion of the coal required for the steam-engine. It is entirely free from every element of explosion or of danger. Watchfulness is not imperatively required, as in the steam-engine. If left unattended, the worst that can happen is, that after exhausting the heat of its fires, and of its regenerator, it will stop. The one we examined, of sixty horse power, has been run at full speed during twenty four consecutive hours, consuming but nine hundred and sixty pounds of coal. After feeding the fires, it continues to run three hours without replenishment, and after withdrawing them from the grates, it operates with full power for the period of one hour, in consequence of the astonishing action of its regenerator alone. We believe we have not, in the slightest degree, overrated the immense advantages of this engine, in point of economy and safety. If we have not, the world may well start with exultation. In magnitude of results, no in-

vention can rank with it. The electric telegraph is one of great interest and value, and to him who reflects that the fierce lightning has by that process been tamed, and brought to the very lips of man, there to be freighted with human language, and sent abroad, to girdle the earth with thought, it becomes sublime. Still, it is greatly inferior, in practical importance, to the discovery of a motive-power such as we have attempted to describe. Human speculation fails adequately to estimate its influence upon the social and commercial relations of men and of nations. Its effects will naturally be first exerted upon the ocean. It is here that the value of such a power will be most sensibly felt and appreciated. Here it will soon become the strong arm and right hand of Commerce. It may be affirmed with confidence that, with engines upon this plan, a ship of two thousand tons can be propelled from San Francisco to China and back with less coal than is now required for an ordinary ocean steamer to cross the Atlantic.

The annals of the mechanic arts furnish no instance of an important invention having been brought before the public in so complete a form as to warrant its being carried out on a scale of the first magnitude from the outset. Ericsson's Caloric Engine will form an exception. A ship is now building for its reception by Messrs. Perrine, Patterson, and Stack, measuring twenty-two hundred tons burden, and her engines, which are being constructed by Messrs. Hogg & Delamater, comprise four working cylinders, each of 168 inches in diameter. We have visited both the shipyard and the engine manufactory, and have inspected with more than ordinary interest the work on which more than four hundred men are now busily engaged. The ship is quite a remarkable structure, both in point of form and strength. The engines being placed in the center of the vessel admit of a better form of midship section than in steamships. Of this the builders have availed themselves by giving such a rise to the floor that strength and easy lines for passing through the water are appropriately combined. The lines of the ship at the entrance are singularly fine; and yet, by a very judicious application of the "wave line," as it is technically called, the bow possesses all the fullness requisite for a good sea-boat. The run is alike peculiar for easy lines, combined with stability and requisite bearing. The strength of floor, which is built entirely solid from stem to stern, surpasses anything we have seen in this country, noted as it is for producing the best ships in the world. In order to give additional strength to the ample timbers, the entire frame is banded by a double series of diagonal braces, of flat bars of iron, let into the timbers at intervals of about three feet, each series being riveted together at all the points of intersection. In addition to the ordinary central keelsons, there are six engine keelsons, bolted on the top of the floor timbers, for three-fourths of the length of the ship. On these keelsons the bed plates of the engines are secured by bolts passing

through the floor timbers. These bed-plates extend over the entire area occupied by the engines, and present a continuation of iron flooring, not witnessed in any steamship. The security thus attained is further enhanced by dispensing entirely with the numerous holes through the bottom of the vessel, which in steamers are necessary, and have often brought that class of vessels to a sinking condition. The engines being arranged in the center of the vessel, the decks are not cut off as in steamers; and as the whole of the machinery is confined within a vertical trunk 76 feet long, and 18 feet wide, ample space is left on each side of the ship for state-rooms along its entire length, with unbroken passages, fore and aft, on either side. The freight-deck also presents an unbroken area fore and aft, diminished only in width in the central part of the vessel. The coal being carried in the bottom, at each side of the engines, the fore and aft hold are clear for freight. The central arrangement of the engines involves, of necessity, a *central* crank, and thus the spar-deck presents an uninterrupted area, on both sides, the ordinary objectionable crank hatches being dispensed with. The slow combustion peculiar to the caloric engine renders the huge smoke funnel unnecessary. A short pipe to carry off the gases produced by the combustion in the furnaces takes its place in the caloric ship. The absence of steam in every form is sufficiently important in producing a more pleasant atmosphere than in steamers, but far more remarkable is the fact that the quantity of air which will be drawn out of the ship by the action of the supply cylinders of the engines, will exceed *sixty tons in weigth* every hour! Captain Ericsson, in calling our attention to this fact, furnished us with a few figures that we feel certain our readers will need, as much as we did, to comprehend how so vast a ventilation is effected. Each supply piston presents an area of 102 superficial feet, with a stroke of six feet. 612 cubic feet of atmospheric air will therefore be drawn into the engine at each stroke; and when the engine makes fourteen strokes per minute, 8,568 cubic feet. But as there are four supply cylinders, they will, in this space of time, draw in 34,272 cubic feet; and in 60 minutes there will be thus circulated 2,056,320 cubic feet. The weight of atmospheric air is nearly 13½ cubic feet to the pound; and thus it will be seen that 68 tons of air are drawn from the interior of the ship, through the engines, and passed off into the atmosphere, every hour. The effect of such an extraordinary system of ventilation, in purifying the atmosphere of the ship, is self-evident.

The simple construction of the caloric engine, and the small quantity of coal to be handled, will reduce the number of engineers and firemen, in the aggregate, to less than one-fourth the complement required for steamers. This great reduction in the number of men, whose duties are incompatible with strict cleanliness, will still further promote a purer state of atmosphere in caloric ships than in steamers. Again, as no smoke whatever is produced, when

anthracite coal is employed, the masts and rigging of the caloric ship will be as clean as in sailing vessels. We examined the combustion of the sixty-horse caloric engine most critically. No smoke could be detected from it, and we arrived at the conclusion, that with such a slow combustion and easy firing smoke cannot possibly emanate from the anthracite consumed in the furnaces. Europe has scarcely any of this fuel, and in a national point of view, therefore, the introduction of the caloric-engine is important. We congratulate the commercial world that this invention is to be presented upon a scale and in a manner commensurate with its surpassing magnitude. The commercial part of this enterprise is conducted by Mr. John B. Kitching, a merchant of the city of New York, who has, for this purpose, associated with him a few gentlemen of wealth and high standing. It is fortunate that he possesses the practical intelligence which has enabled him to appreciate the advantages to be derived from the introduction of this new motive-power. He at once concurred with Captain Ericsson, that its development in practice should so thoroughly test its utility and value, that no doubt could thereafter be entertained concerning either. So far as human scrutiny and foresight can penetrate, this invention promises to be the richest boon to Commerce and civilization yet attained by the application to machinery of those natural forces created by Omnipotence for the benefit of our race. Upon the manner of its first introduction to the world, will, in a great degree depend the time within which it will be made generally available in practice. Mr. Kitching will be remembered as the man whose sound judgment and perfect self-reliance have so contributed to present the caloric-engine to the public, that a second trial will not be required to warrant its universal adoption.

Article III.

From the American Railroad Journal.

Mobile and Ohio Railroad.

CIRCULAR OF THE BOARD OF DIRECTORS.

Mobile, August 2, 1852.

The Directors of the Mobile and Ohio Railroad Company, having made provision for the grading, masonry, bridging and other local work of the entire line of this road, from Mobile to the Ohio river, (with the exception of a short link in North Mississippi and Tennessee, where subscriptions are sufficiently advanced to ensure the necessary amount before the first of October next,) propose, in pursuance of their original policy, to offer the six per cent bonds

of the Company, in London, having from twenty to thirty years to run, to the amount of five million dollars, or as great a portion thereof as may be required for the purchase of iron, equipments, etc., sufficient to place the whole road in full working operation.

Preparatory to entering the market for the first time as borrowers and for the better understanding of the nature and value of the securities which are to be presented to the consideration of foreign capitalists, as a basis of credit, the following brief exhibit of the origin, progress, resources and prospects of the company is submitted:

In the month of February, 1848, favorable charters were obtained from the States of Alabama, Mississippi, Tennessee, and Kentucky for the construction of a railway from Mobile, on the Gulf of Mexico, to a point at or near the mouth of Ohio river, by a company, under the corporate title of "THE MOBILE AND OHIO RAILROAD COMPANY." In May thereafter, books for subscription were opened at Mobile, and a sufficient amount of stock having been taken, the company was organized, June 7th, 1848, by the election of its first board of directors.

The first step of the directory, was the institution of a thorough instrumental survey of the country to be traversed by the road. Such a survey was commenced in October, 1848, under the immediate direction of John Childe, Esq., Engineer in Chief, with an efficient corps of assistants; was finally completed in the Autumn of 1849, and the results fully reported to the stockholders at their second annual meeting, July 5th, 1850.

The survey developed the fact, that the country, from Mobile to the mouth of the Ohio river, was eminently adapted for railroad purposes; presenting no natural obstacles in the way of a cheap, direct and level highway between the termini; crossing no navigable streams, but running parallel with the rivers, and upon dividing ridges elevated and beyond danger from freshets. Notwithstanding the favorable report of the Chief Engineer, and while the great feasibility and importance of the undertaking was everywhere admitted; yet the magnitude of the work, its ascertained cost, the apparent remoteness of its accomplishment, and the general indifference of the people of the interior, not then awakened to a spirit of railroad enterprise, rendered the task of accumulating means and confidence a work of time and difficulty.

The directors, however, well assured of the extraordinary merits of the undertaking, determined to proceed with such means as they could command, and accordingly thirty three miles of the road, extending north from Mobile, were placed under contract, and the work of construction commenced. Meanwhile, application was made thro' the State Legislatures, and by the company, to the Congress of the United States, for a grant of government lands, to aid in the construction of this road. That body, promptly recognizing in this enterprise a work of high public consequence, form-

ing in conjunction with the Central road of Illinois, a grand national thoroughfare, donated to the States of Alabama and Mississippi, alternate sections of the public lands, for six miles in width, on each side of the road traversing those States. This munificent donation was accepted by the States, and by acts of their respective Legislatures transferred to the use and benefit of the stockholders of the company. The effect was most auspicious. Public confidence, before withheld or wavering, became decided in favor of the ability of the company to carry through, with this aid, the work which they had undertaken; and the efforts of the directors to obtain stock were promptly responded to by liberal subscriptions. They have been thus enabled to take up the whole as an unit; to secure the means for the local work; and to perfect their plans for the simultaneous and rapid preparation of the road-bed throughout its whole extent.

The line is now finally located, and after a resurvey and carefully revised estimates upon the actual location, the entire cost of the road, including superstructure 65 lbs. per yard, depots, station houses, machine and repair shops, equipments, etc., etc., ready for full and active working operation, is estimated by the chief engineer at $9,750,000, of adding to the sum for extra contingencies, in round numbers, $10,000,000.

The resources in the hands of the directors, for construction, may be stated as follows:

Thirty-three miles completed by Mobile subcriptions, costing	$500,000
Real estate tax in Mobile, two per cent. per annum for five years (assessment $11,500,000 for 1852).	1,100,000
Proceeds sales village lots at 13 and 33 mile stations	50,000
Private and county subscriptions in Alabama and Mississippi, (county subscriptions payable from special taxes each year	1,305,000
Do. do., Tennessee and Kentucky	700,000
	$3,655,000

Making the total resources thus far available for the construction of the road bed $3,655,000. In addition the entire right of way has been obtained for the road—in most cases having been freely given, without cost to the company; while for a nominal sum a large and valuable depot ground—forty acres in extent—has been secured in Mobile, together with a valuable water front and extensive and commodious wharf privileges at the north and south parts of the city.

Beyond the means thus provided, and subscriptions now in progress, the sum of five million dollars will be ample to cover the entire construction account, and place the road in complete and profitable operation. An act of the Legislature of Tennessee, at its last session, authorises the endorsement by that State of the com-

pany's bonds for eight thousand dollars per mile. upon the portion of the Mobile and Ohio road passing through Tennessee. This endorsement will amount to about one million dollars.

The purchasers of the bonds of the company will receive as guaranty and security for their payment at maturity—

(1.) A first and only mortgage lien upon the whole road of five hundred and seventeen miles in length, (including the branch of 23 miles to Tennessee river,) together with all its appurtenances, machinery, fixtures, etc., costing say ten million dollars.

(2.) An endorsement by the State of Tennessee upon one million dollars of these bonds.

(3.) A first and only mortgage lien upon one million acres of Government lands, donated in aid of the road, and located within fifteen miles of the track in the States of Alabama and Mississippi, worth, when the road is completed, an average of three dollars per acre, or three million dollars.

An examination of the peculiar features and characteristics of the route of the Mobile and the Ohio railroad, will at once establish its value as an investment, and its soundness as a security to the extent applied for.

1. It is, and will be for all time, the shortest practicable route between the Ohio river and the Gulf of Mexico, being only eleven per cent. longer than an air line.

2. It will be a north and south line, crossing the parallels of latitude, and extending by its connection with the Central Illinois line, from one extreme of the Union to the other, crossing over twelve degrees of latitude, and the consequent variety of climate and production.

3. It will be nearly a straigth road, having few curves, and those of large radius ; with a maximum grade moving south, not exceeding thirty feet to the mile, and going north not exceeding forty feet to the mile ; thus giving it a higher capacity for cheap, certain, speedy and heavy freight transportation than any other long road now constructed.

4. The great length of this road under a single management ; the absence of large streams upon the route, rendering it less liable to disaster from high water ; the mild climate, and freedom from the action of frost; and other favorable circumstances, will combine to make its net annual income larger in proportion to the gross receipts, than is possible upon the best managed roads of the northern States.

5. Long lines of railway now in progress, east and west, will cross this road at various points, making it the most accessible and convenient route of transit to the Gulf for a vast area of country. One hundred and twenty miles north of Mobile the Alabama and Mississippi railroad will intersect the Mobile and Ohio road, forming westwardly a continuous line to Vicksburg, Mississippi, and

eastwardly to Charleston, South Carolina. About two hundred miles further north, the Memphis and Charleston railway will also connect this road with Memphis, Tennessee, and the various lines eastward to the great thoroughfares of the Atlantic slope of the Alleghanies. In North Mississippi, a branch diverging to Nashville, Tennessee, again divides north of that city into two important lines, extending to Louisville and Cincinnati. In Tennessee, one branch rests upon the Ohio, at Paducah, and another terminates on the Mississippi at Columbus, Kentucky, while the main stem to Cairo unites with the Central road to Illinois, and forms a connection with an extended network of railway, spreading over the whole western valley, and converging towards the Gulf, upon this great trunk line.

6. This road will pass, for one hundred miles, over a heavily timbered country, abounding in lumber of excellent quality, for which Mobile is rapidly becoming a large market; and after leaving the forest, will strike one of the most fertile cotton regions of the South; again leaving which, it will enter the wealthy grain-growing districts of West Tennessee. The local traffic which will be furnished by the wealthy country immediately dependent upon this road for an outlet to the sea, will alone make it a profitable line for the stockholder.

7. The cost of the road will not exceed the estimates. They have already been verified in part by the completion of 33 miles of the work at $1,655 per mile less than estimated, and the further contract of 55 miles, also at rates within the figures of the chief engineer; and from the abundance of provisions the coming year, now rendered certain by the favorable season, a fair prospect exists of making a greater saving upon the contracts soon to be offered.

8. The estimates of business and income are rather under than over the mark. They are based upon actual data of the products, commerce, population, etc., of the counties dependent upon the road; and are made by an officer of large experience, sound judgment, and thorough knowledge of railroad affairs, whose approximations heretofore have been found remarkably correct. In his official report to the diretors, Mr. Childe estimates the net income of this road at 14¾ per cent. upon its cost, and says: "From a careful examination of the country, its products, and present tedious and expensive modes of reaching the markets, I feel great confidence that the road will, in no case, fall short of the amount of traffic and income stated above for the first year, commencing six months after the divisions shall be fully and respectively completed."

9. The road is now in active healthful progress. As stated, above 33 miles are completed and in operation; 55 miles more of the line is under contract for the graduation, masonry and bridg-

ing, upon which a large force is now actively employed; 179 miles further is advertised, and will be contracted before 1st of October next; and the remainder of the line to the Ohio river at an early day thereafter. By the time the iron can be laid down in Mobile, the most forward sections will be ready to receive it, which will enable the company to bring the southern portion of the road into early profitable use, and provide for the first instalments of interest upon their loan from its earnings, thus retaining the principal nearly unimpaired for purposes of construction alone.

The directors feel satisfied that, for the reasons herein set forth, a mortgage upon the road itself would constitute an abundant and ample security for a loan of the amount required, namely $5,000,000, or about one half its cost.

But they propose to offer the additional guarantee of the credit of the State of Tennessee for 20 per cent. of the entire loan, as provided by act of her legislature—a State whose securities (6 per cent.) are now quoted at 109½ to 110, or nearly 10 per cent above par. This recognition by Tennessee of the Mobile and Ohio road furnishes evidence, to which the directors could add nothing, to increase its weight, or commend it more strongly to consideration.

Again, and in addition to these, the company holds large and valuable tracts of land bordering upon the road, the gift of the general government, containing about one million acres. A portion of these lands is covered with heavy forests of valuable timber; another portion embraces excellent lands; and the whole is equal in fertility to the average of the country through which the road passes. These lands at the lowest valuation, will be worth, the moment the road shall be completed, fully one-half the amount to be loaned to the company, or one-fourth the entire cost of the work. If withheld from sale for a few years after the completion of the road, it is believed that a much larger sum may be realized from their disposal, estimated at 40 per cent. of its cost, or four-fifths the amount of the company's proposed loan. A first lien upon these lands will also be given in trust to the bondholder, as security for the loan.

The basis of credit which the company has thus established, as briefly set forth in this communication,—into the correctness of which in all particulars the closest scrutiny is invited and desired —and the perfect and complete security that is offered, will, the directors feel assured, attract the attention of capitalists, and place the bonds of the company where they of right belong, upon an equal footing with the best first class securities offered in any market.

NOTE.—The county subscriptions mentioned upon page 3 are to be collected by special tax, levied for the purpose, and not by the issue and sale of county bonds. The Mobile tax it is now believed will yield nearly $1,500,000 in consequence of the rapid improvement in real estate, upon which the assessments are made.

ARTICLE IV.

(From Appleton's Mechanics' Magazine.)

Heat, Combustion, and Fuel.

There are three modifications of heat of which philosophers speak: sensible heat, latent heat, and specific heat. *Sensible heat* is the heat which is observable by the thermometer, or discoverable by the senses; and this kind of heat exists in every thing with which we are acquainted; for, as we know of nothing so cold but what it might be colder, there is nothing without a certain degree of heat in the whole range of our experience.

Latent heat is defined to be that heat which is not discoverable by the thermometer, but is expended in producing a change of state, as in the liquefaction of ice or the vaporization of water. If an open vessel of water be placed upon a fire, the temperature of the water will not rise above the boiling point, or 212 degrees, however long the boiling be continued, although the water must have been all the while receiving accessions of heat from the fire. All the heat received over and above that requisite to produce the temperature of 212°, is expended in the formation of steam, but the steam itself does not rise above 212°; and on account of the heat thus hiding itself, as it were, in the steam, it is called latent heat.

The latent heat of steam is said to be 1000°, which means that it would take 1000 times more heat to raise a pound of water into steam than to raise it one degree in temperature; or what is the same thing, the heat required to raise a pound of water into steam would raise 1000 pounds of water one degree. From this it appears that it requires about 5½ times as much heat to raise any given weight of water into steam, as would raise the same weight of water from the freezing to the boiling point. The freezing point is 32°, and the boiling point 212°, so that the amount of difference, or the number of degrees through which the temperature has to be raised between the freezing and boiling points, is 180°, and 180° multiplied by 5½ is 990, or 1000 nearly.

Specific heat means the quantity of heat contained by one body at a given temperature, compared with the quantity contained in another body at the same temperature. It by no means follows that the same weights of different bodies at the same temperature contain the same quantities of heat, any more than that the same bulks of different bodies contain the same quantities of matter; and the specific heat of a body indicates the quantity of heat it contains, just as its specific gravity indicates its quantity of matter. The specific heats of a great number of bodies have been ascertained and arranged in tables just as their specific gravities, and

the specific heat of water is taken as the standard. The specific heat of steam, for example, is rated at ·847, that of water being 1. But there are very few of the experiments on the specific heats of aeriform bodies, upon which much dependence can be placed; as the investigation is one of infinite difficulty, from the delicacy required in the manipulation, and the minuteness of the result that is to be caught.

A great deal of confusion has been cast over the subject of specific heat by the accredited definition of latent heat, which is said to be the heat absorbed by bodies during a change of state from solid to liquid, and from liquid to aeriform, whereas it ought to be the heat absorbed without elevation of temperature, whether there be a change of state or not. The practical engineer, however, need not puzzle himself with the various theories on this subject, but endeavor by a system of careful observations to collect such data as will aid the philosopher in arriving at correct conclusions, and the basis for a sound theory of heat and combustion.

It will suffice to mention that there are two theories respecting the nature of heat: the one regards it as a material substance, and the other as a mere undulatory motion in the molecules of bodies, or in a highly elastic and subtle fluid which pervades all space, and which is capable of transmitting vibrations. As philosophers still differ upon this object, it is not to be supposed that we shall perplex ourselves with it, especially as engines will work equally well whatever theory be the correct one. The inquiry, however, is not without interest, as, if the doubt were resolved, we should perhaps have such light thrown upon the modes of exciting heat, as might greatly conduce to economy in steam machinery, and at least we should then be able to construct furnaces more scientifically.

Heat is communicated to other bodies in three ways—
1st. By direct contact, called *Conduction.*
2d. By carrying, called *Convection.*
3d. By right lines, called *Radiation.*

On Conduction.—When heat passes from particle to particle of a solid body, it is said to be *conducted;* thus, if a bar of iron be put into the fire, the heat travels from one end to the other by conduction.

Many bodies conduct very badly; indeed, gases, and fluids, and earthy substances scarcely conduct at all. If heat be applied to the upper surface of water, a thermometer at the bottom of the vessel will not be affected by it. This remark must be borne in mind in the construction of steam-boilers. Metals are generally good conductors, though there is a sensible difference in their power in this respect. Thus, by Despretz's experiment, the conducting powers of some few substances will be represented by the following table:

Gold	100	Lead	17·96
Platinum	98·1	Marble	2·34
Silver	97·3	Porcelain	1·22
Copper	89·82	Brick Earth	1·13
Iron	37·41	Fire Clay	1·14
Zinc	36·37	Water	9
Tin	30·38		

The knowledge of the difference of the conducting powers of substances is of great utility; for by these means it is possible to keep any material hot or cold, at pleasure, for a considerable time. If the source of heat be *internal*, and we wish to keep it warm, it must be cased in some *non*-conductor, such as flannel or felt. Porous substances are generally bad conductors, and this may probably be the reason a layer of snow is so effective in preserving the temperature of the ground.

Good conductors feel hotter or colder than bad conductors of *equal* temperature, according as their temperature is above or below blood-heat, because they are more ready to give out or absorb heat; thus, if a piece of iron and a piece of wood be exposed to the influence of the atmosphere, the iron will *feel* much hotter than the wood when both are exposed to the meridian sun, while it will *appear* to be colder than the wood at midnight.

Convection.—Liquids and gases, though bad conductors, may still transmit heat by the law called *convection*, which may be explained as follows: If heat be applied to the *lower* particles of a fluid mass, it will cause them to expand, and therefore their specific gravity becomes less than that of the upper strata; consequently, a displacement of the particles ensues, the lighter rise to the surface and are replaced by the heavier ones, which in their turn become heated and are replaced by the others, and so by this process the heat is conveyed throughout the general mass. The same yrinciple applies to gases.

The advantages to be derived from a knowledge of this law are apparent in apparatus for boiling fluids, where the fire should be applied as low down as possible; the surface exposed to the fire should be large, and there should be a facility for the heated particles to rise to the surface. This principle also explains the whole theory of ventilation. If we confine air in a close vessel, and apply heat to the lower strata, a continual interchange will take place; but if we make two orifices, one in the lower part of the vessel, and another in the upper, the heated air will escape at the higher orifice and its place be supplied by that which enters at the lower one, and a continual draught be produced through the vessel. Hence it follows that a tall, upright shaft, produces a violent current of air through a furnace; yet there are limits to the practical application of this principle, from the cooling of the upper portion of the column, and from the friction of the air against

the sides of the shaft. The wind-sails of a ship afford an instance in which the law of convection is made available for ventilation; we may also mention the casing placed round the funnel of a steam-boiler to prevent its burning the deck. There would be no advantage from this casing if the air were confined between it and the funnel; but the top is open, and the casing is pierced with holes below the deck, whereby the warm current of air from the top of the boiler and engine-room enters, and by continually ascending is dissipated in the atmosphere without becoming very hot.

On the Law of Radiation.—By radiation a hot body gives out its heat just as a luminous body gives out its light. Although the rays of heat are not visible to the eye, they are sent out in every direction in straight lines, becoming more and more faint as the square of their distance increases; thus the effect of radiant heat is $\frac{1}{4}$th at a double distance; $\frac{1}{9}$th at three times the distance, and so on.

The radiating power of bodies depends principally on the nature of the surface. Those bodies whose surfaces are rough radiate most, and polished substances radiate least. If a steam-pipe or cylinder be coated with felt, it will diminish the convection; but let us suppose a portion of the heat to have reached the outer surface of the felt, then from its roughness heat would readily escape by radiation. To prevent radiation, therefore, we should coat the felt with canvass and paint it; the varnish of the paint will give a smooth outer surface, and conduce by its color to diminish the radiation.

Heat appears to be a compound derived from the union of a combustible with an incombustible, which supports or supplies the constituent part necessary to complete combustion, and without which definite supply combustion is imperfect. This combination infers different qualities of the two ingredients in the compound of heat. Strictly, the process of combustion is complex, and only partially understood. As far as regards its ordinary operation in the steam-boiler fireplace, we will endeavor to convey a clear exposition of its more important features.

A coal, for instance, thrown on a fire, evolves, amongst others, the two principal combustibles of carbon and hydrogen, which, uniting with the oxygen of the air, an incombustible yet a necessary supporter of a fire, produces heat and light at the same time. Simple as this may appear, its analysis is yet a complicated chemical problem. The chief agents operating in the furnace, are carbon, hydrogen, and oxygen, and their union in certain proportions produces other bodies, as water or steam, carbonic oxide, carbonic acid, besides others of less practical importance.

The combustibles universally used in the furnaces of steam-engines are either coal or wood. The former is used almost invariably in Europe, the latter is still used in this country in particular districts.

The constituents of coal are chiefly carbon and a gas called hydrogen, combined occasionally with a small proportion of sulphur and incombustible matter.

In the process of combustion, the carbon, the hydrogen and the sulphur combine with the oxygen gas, which is a constituent of the atmosphere, and other products are formed. In this combination a quantity of heat is developed. The incombustible constituents drop from the grate, and are left in the ash-pit. The goodness of coal depends in some degree on the small proportion of incombustible matter which it contains.

The proportion of carbon contained in coal varies; in good coal it is seldom less than 75 per cent. of the whole, sometimes considerably more.

Hydrogen cannot be said to enter as a constituent of coal in its pure and simple form. It is always combined with a portion of carbon, and is the gas called *carburetted hydrogen*, being that which is commonly used for the purpose of illumination. This gas may be expelled from coal by exposing the latter to heat, by which means the gas, expanding, is forced from the interstices of the coal, and may, if required, be collected in proper reservoirs. This process, applied to the coal, is called coking; and it is in this manner that the gas is collected in gas-works for the purposes of illumination.

The proportion of carburetted hydrogen, the element which produces flame, varies in different sorts of coal. The more bituminous sorts generally have a considerable proportion; the heavy coal called stone-coal, or anthracite, obtained in some of the coal-fields of Wales, Pennsylvania, and elsewhere, have very little. In all cases the proportion of this element by weight is insignificant.

Carbon burns without flame, the product of the combustion being the gas called *carbonic acid*, which escapes from the fuel in a very heated state.

These are the general effects of combustion; but for the practical purposes of art, something more must be learned. We must ascertain with some degree of precision the quantitative proportions in which the various elements concerned in the phenomena are present.

To begin, then, with the chief ingredient of all combustibles, carbon:

This substance, when heated to a temperature of 700° or 800°, equal to that of red-hot iron, will enter into chemical combination with the gas called oxygen; the result of this combination will be another gas, called carbonic acid. In forming this combination a large quantity of heat, previously latent in the carbon and the oxygen, is rendered sensible, and is developed in two ways: 1st, in rendering the remainder of the carbon incandescent, or white-hot; and 2d, in raising the temperature of the carbonic acid which has been produced to a very high point.

From the luminous or incandescent carbon the heat escapes by radiation, according to the same principles and laws that govern the radiation of light. That portion of it which is carried off by the carbonic acid may be taken from such gas by placing in contact with it any surface which is a good conductor of heat, such as metal: the heat of the gas will be imparted to the metal until the temperatures of the metal and the gas be equalized.

But it is necessary to know the *quantity* of oxygen gas which is requisite to combine with the carbon.

It is found that a pound of pure carbon will enter into combination with 12 cubic feet of oxygen at the ordinary temperature and pressure of the air, the result of the combination being 12 cubic feet of carbonic acid, this being supposed to be reduced to the same temperature and pressure. But as the temperature of the carbonic acid, at the moment of combination, is very much elevated, it will then have an enlarged volume.

Common combustion, however, is maintained not by an atmosphere of pure oxygen, but by that of the common air.

Common air is a mixture of oxygen and azote, in the proportion, by measure, of 1 to 4—five cubic feet of common atmospheric air containing but one cubic foot of oxygen. To obtain twelve cubic feet of oxygen, therefore, we must necessarily have 5 times 12, or 60 cubic feet of common air.

Supposing then (which is, however, in practice not the case), all the oxygen contained in the atmospheric air supplied to the fuel in combustion to enter into combination with such fuel, it would be necessary to supply 60 cubic feet of atmospheric air for every pound of carbon consumed.

The result of this combination would be the production of 12 cubic feet of carbonic acid, formed by the combination of the oxygen of the atmosphere with the carbon, and 48 cubic feet of azote, which would be mixed with the carbonic acid so produced. This volume of mixed gases would escape from the fuel at a very high temperature, and would in this state pass into the chimney.

Hydrogen gas combines with 8 times its own weight of oxygen, and the result of the combination is water, or, more properly speaking, steam; for it is rendered into the vaporous form by the great heat developed in the combustion.

We have stated that a small proportion of sulphur is present in most sorts of coal. In burning, this produces sulphurous gas. It is inefficient as to its heating power, and insignificant in its quantity, but most injurious in its effects on boilers. Coal, therefore, having much of this element, should be avoided in steam-boilers.

To maintain the fuel in combustion, it is then evident that it must be continually supplied with atmospheric air. The rate of this supply will depend on the rapidity of the combustion which is required, and the quantity and quality of the fuel. The fuel is

spread on a grate, between the bars of which the air which sustains the combustion is admitted. In passing through the fuel, the air enters into combination with it, and the gases resulting from the combustion, including uncombined oxygen and the azote of the atmospheric air, which last plays no part whatever in the combustion, issue together into the upper part of the furnace, all having a very high temperature; these proceed to the chimney, which they soon fill with a column of heated air, the buoyancy of which makes it ascend into the atmosphere, and the vacuum it leaves behind it draws a fresh portion of air through the grate bars, and so the combustion is continued.

The azote, which forms so large a constituent of atmospheric air, has qualitities in relation to combustion merely of a negative kind; it does not either check or stimulate it. Thus, as a supporter of combustion, the atmosphere may be considered as diluted oxygen, the azote having the same effect on the particles of the oxygen as water would have upon a strong spirit mixed with it.

In what has been just explained, the calculations are based upon the supposition that every particle of oxygen contained in the atmospheric air, urged through the burning fuel, enters into combination with it. Now this is not, and cannot be the case, even in the most approximative sense; and therefore, to complete the combustion of the fuel, a much greater quantity than 60 cubic feet of atmospheric air for a pound of carbon consumed must be drawn through the fire. The exact quantity which is necessary is not capable of calculation, for it depends on circumstances which vary with the form and structure of the grate and the mode of working the furnace; but it may be safely assumed that not less than from 150 to 200 cubic feet of atmospheric air are necessary in ordinary furnaces for the combustion of each pound of carbon contained in the fuel.

It will be understood that when the fuel is laid in a stratum more or less thick upon the grate, and when rapid currents of air are ascending through its interstices, a quantity of the fuel, always existing in the state of powder or small dust, will be carried upward by the current, unburned.

Besides this, as the heat expels the hydrogen gas from the interior of the coal, minute particles of the coal itself escape with the current, and rise above the fuel. Much of this is also unburned, or, to speak scientifically, uncombined with oxygen. It is this minute powder or dust, uncombined with oxygen, that forms what is called smoke. The gaseous products of combustion, properly so called, have not the cloudy and opaque appearance which characterizes smoke. This smoke, then, is unconsumed fuel, and to whatever extent it is produced, it escapes into the chimney, and is a source of waste. It is clear, then, on the grounds of economy, that the quantity of fuel, more or less, thus escaping, should be arrested and burned before it reaches the chimney.

We proceed to an exhibition of the value of the several kinds of fuel in use for marine engines—the result of carefully conducted experiments made, on an extended scale by order of our government, by W. R. Johnson, Esq. These experiments were all conducted with the same furnace, and if the results should not prove absolutely correct for all forms of furnaces, they are yet relatively so. We confine our selections from his report to a condensed summary suited to the wants of practical men.

The value of any particular variety of fuel will depend principally upon the evaporative power of its unit, and the number of units that can be stowed in a given space. But this will be materially modified by the grate surface required to furnish (with equal velocity of draught) the necessary amount of air for combustion; for, in marine steamers, the great surface is limited by the beam of the vessel—the maximum length of the furnace being fixed by practice at 7 feet, beyond which it cannot be extended beneficially on account of the difficulty in firing. Again, the relative amount of clinker and soot are important to be considered, as the one, by covering the grates, prevents the access of air and retards combustion; while the other, by covering the flues, acts as a non-conductor and prevents the absorption of heat. Lastly, the per centage of sulphur is of some importance as its presence is decidedly injurious to the iron of the boiler; and in a minor degree the per centage of ashes should be considered, as they involve the labor of hoisting them overboard, besides occupying room in the furnace. A comparison of these properties will be found in the table.

From an examination of the tabulated results of this series of experiments, it appears that, of the dry gases (products of combustion) in the flue, 10 per cent. of bulk consisted of uncombined oxygen. As the proportion of oxygen by bulk in atmospheric air is one-fifth, there results that 50 per cent. of the gases in the flue was unchanged atmospheric air, and as carbonic oxide is nowhere observed, this whole quantity of atmospheric air is in excess over what was required for combustion at the experimental temperature.

The temperature of the gases upon entering the smoke chimney —that is, upon leaving the boiler—averaged 294° F., which, upon estimating the temperature of the furnace at 1000° F., gives a reduction of two-thirds of the heat. This indicates that a corresponding reduction of area of flue should be made; otherwise the gases with the reduced temperature would have a correspondingly reduced bulk, and if continued in a flue of the same area, would have a less velocity, and be accompanied by a greater deposition of soot. The gases had a velocity of exit into the chimney of 11½ feet per second, there being on an average 8 pounds of coal consumed per hour on each square foot of grate. The area of flue at

the bridge was 23½ square inches to each square foot of grate. The smoke chimney was 58 feet high, with an area of 22½ square inches to each square foot of grate.

The proportion of grate to heating surface was 1 to 26, and each square foot of grate surface contained 50 square inches of air surface. The grate bars were ¾ inch thick, with ½ inch spaces between them.

The average evaporation by each pound of coal per hour was 223 cubic inches of water by the anthracites, and 206 cubic inches of water by the bituminous, from the initial temperature of 63°, the air entering below the ash-pit being 70° F. From each square foot of heating surface there was evaporated by the anthracites 55 cubic inches of water, and by the bituminous 61 inches of water; the escaping gases being at the respective temperatures 273° and and 302°, or the ratio of 1 to 1·106. The ratio of 55 to 61 is 1 to 1·109, or very nearly corresponding.

The per centage of total waste from the anthracites compared to that from the bituminous was as 1 to 1·07. The comparative per centage of clinker alone was as 1 to 2—of soot alone as 1 to 5·70.

The bulk of air at standard pressure of 30 inches barom., and temperature of 60° F., required for the combustion of the anthracites, was, as compared with that required for the bituminous, as 1 to 0·724.

The spec. grav. of the anthracites was 1·50; of the bituminous, 1·33.

The space required to stow one ton of the anthracites was 42·14 cubic feet; of the bituminous, 45·57 cubic feet, or the ratio of 1 to 1·06. The per centage of evaporative power expended in expelling the products of combustion, was, for the anthracites, 14·58; for the bituminous, 16·34, or in the ratio to each other of 1 to 1·121.

In the single experiment on dry pine wood, its evaporative power for the unit of weight was one-half that of coal, and the same grate surface and draught consumed twice the quantity by weight per square foot of grate, showing that the same proportions of boiler would give the same result—of course, requiring twice the weight of fuel. Now the pine wood when piled with extreme attention to placing the maximum of matter in a given space, weighed 21 pounds per cubic foot, requiring twice and a half the space to stow equal weights with coal; therefore there would be required for dry pine wood five times the space required for equal coal, to produce evaporative effects.

With the most rapid combustion the proportion of clinker was highest, and the usesul effect from the fuel greatest. When the combustion was most retarded by partially closing the damper, there resulted the greatest per centage of waste and the least useful effect from the fuel. This is accounted for by the want of air,

by the stifling effects of the products of combustion retained near the fire, and by the increased quantity of smoke produced in such cases by the diminished temperature of the furnace.

Experiments upon a mixture of anthracite and bituminous coals establish :—that when a coal of high bituminousness was mixed with anthracite, the coking of the former materially agglutinates, not only its own masses, but also those of the anthracite, closing the open spaces of the latter, and preventing the easy access of air; causing the fire to become sluggish. But with a free-burning bituminous coal, the bituminous lumps scarcely cohere, and still less do they adhere, to the anthracite. Each ingredient of the mixture retains its distinct evaporative power, the total being the sum of both.

The experiments seem to prove, as before remarked, that the carbon in coal is the only *available* element of its heating power. Those who have sought to determine the heating power of fuel for practical purposes, by computing the heating power of its hydrogen from the data given by chemists, appear not to have considered, that the hydrogen experimented on by chemists was already in the gaseous state, while in fuel it is either in the liquid or solid form at the commencement of combustion, and is converted into the gaseous state at great expense of caloric, which is rendered latent, and cannot be again made free. The practical value of this loss is also increased, when the products of combustion pass away at a higher temperature than that of the water supplied for evaporation.

ARTICLE V.

Steamship Mail Service of the United States.

We copy the following account and statistics relating to the transportation of the mails on ocean steamers from the U. S. Senate committee on the post office and post roads :

With a view to a full and fair understanding of this important subject, your committee have communicated, through their chairman, with the Executive departments of the government and the presidents of the various companies engaged in carrying the ocean mail by steam, and will now proceed to lay before the Senate the results of their careful inquiries. It may not be improper here again to note, by way of illustration, the benefits to be derived from ocean steam mail transportation, when in successful operation, as manifested in the case of the British Cunard line, under the auspices of the British government. During the first six years

of its existence, the line above named received from the government no less than $2,550,000, while the government received from the company, in the form of postages, the enormous sum of $7,-836,800, or $5,286,800 nett revenue.

The line of ocean mail steamers, usually called the Collin's line, has been in operation since the month of April, 1850, or about two years; the ships had made, previously to January last, forty-two trips, from New York to Liverpool, and forty, from Liverpool to New York. The contract for the transportation of the United mail between the places above named was made on the 1st day of November, 1847, the law which authorizes it having been passed on the 3d of March preceding.

The line consists of the following vessels, viz:

The Atlantic	2,845 66-95ths	tons burden	commenced	April	1850
The Pacific	2,707 10-95ths	"	"	May	1850
The Arctic	2,856 75-95ths	"	"	October	1850
The Baltic	2,723 9-95ths	"	"	Novem.	1850

These ships cost, when ready for sea, in cash, $2,944,142 76, or an average of $736,035 67 each.

They have made forty-one voyages between New York and Liverpool, at an average expense of $65,212 64 per voyage, making, in all, the sum of $2,673,841 24, which, when added to the cost of the ships, say $2,944,142 76, makes the entire amount of money expended $5,617,984.

On the other hand, the average receipts of the company, per voyage, have been, as stated, $48,286 85, or in all, $1,979,760 85—amount advanced, $208,000—and amount paid for two years mail service, $770,000, making the total receipts from all sources, $2,957,760 85.

If the amount of receipts, as above, be deducted from the amount of expenditures, say $5,617,984, the balance against the concern will be $2,660,223 15, and if the original capital subscribed be deducted, to wit: $1,132,000, there will remain an outstanding deficiency of $1,528,223 15, to be met by the present value of their ships.

In the meanwhile the company has paid to the government two annual instalments upon the $385,000 advanced, which, at ten per cent. annually, upon the sum loaned, amount to $77,000, reducing the balance on its debt to the government to $308,000, which is in the course of being paid at the rate above named, and will have been cancelled entirely in eight years from this time, the ships being held as security until the whole debt shall have been paid.

The whole amount earned by this line, in letter postage, up to the 1st of March last, has been $373,337 80, which sum is taken as the fair basis of calculation, as the three twenty-fourths due to the British government has been met, by as large or a larger sum due from that government for the five twenty-fourths payable to

the government of the United States upon the earnings of the Cunard line, under the postal treaty between the two countries. Taking, then, the gross amount of receipts from letter postage, say $373,337 80, and adding to it $3,200, for postage for the State Department, $90,151 58 for closed mails for the continent, carried by this line, and $46,858 88 postage for newspapers, the aggregate earnings for the government by this line will have been $513,546 80.

Thus it appears, that from a fair statement of the account current between the line and the government, the latter is out of pocket, at the end of the two first years of the undertaking and under circumstances the most disadvantageous to the line, $256,453 20, or in other words, has paid $128,226 60, per annum, for carrying the ocean mail by steam over about six thousand miles of the greatest commercial thoroughfare in the world, for which, as yet, it has received nothing in return. But your committee would ask, what has *the country* received in return for this $256,453 20? They will furnish the answer. The country has received through the proprietors of this line, in the forms of freights and passage-money, a no less amount than $1,979,760 85, in cash; and, if the reduction in the prices of freight formerly paid to the British line be taken into account, nearly as much more, by saving the difference in freights and passage-money, to say nothing of the general advantages derived by all of our producing interests from the existence of this American line, which, as your committee believe, are incalculable. The money account will then stand as follows: government debtor $256,453 80, country creditor to $1,979,760 85, *in cash*; and if the former be deducted from the latter, the balance in favor of the country will stand $1,723,307 05, *in cash alone*, leaving out of view the duties on increased importations caused by the establishment of the American line.

The next line to which your committee would invite the attention of the Senate, is the line between New York and Chagres, via New Orleans, &c., established under a contract entered into with A. G. Sloo, his associates and their assignees.

The contract for this line was made on the 20th of April, 1847, to continue in force for ten years from the date of the commencement of the service. It provides for the establishment of a line of steamships, of not less than 1,500 tons burden each, to be built under the supervision of the government naval constructor and convertible into war-steamers of the first class, with engines of not less than 1,000 horse-power each; the contractors having the privilege, with the consent of the Secretary of the Navy, of making one of the ships of not less than six hundred tons burden. Two of the ships were required to be completed by the 1st of March, 1848, and the whole line to be in operation by the 1st of October, 1849. The service of these ships consists in transporting the U. S. mail

from New York to New Orleans, twice a month and back, touching at Charleston, (if practicable) Savannah, and Havana; and from Havana to Chagres and back, twice a month, with the usual provision for the accommodation of a lieutenant of the navy as commander and four passed midshipmen, in each ship; also an agent of the Post Office Department, free of charge to the government. This contract was transferred to George Law, Marshall O. Roberts and Bowes R. McIlvain, of the city of New York, on the 17th day of August, 1847. The annual compensation for full service is $290,000, and rateably for partial service.

This line, in conjunction with the line called the Pacific, or Aspinwall's line, between Panama and Astoria, in Oregon, constitutes the entire mail line from New York to Oregon, via the Isthmus of Panama, and will therefore be treated of in connection with it.

The vessels employed in this line are as follows:

Names.	Tons & 95ths.	Commencem. of service.	Cost.
Falcon	891 18	Decemb. 1848	$203,465 11
Ohio	2,432 23	Septem. 1849	464,487 67
Georgia	2,727 42	January 1850	464,487 67
Crescent City	1,291 00	April 1851	206,250 00
El Dorado	1,049 88	April 1851	154,000 00
Empire City	1,751 21	May 1851	247,500 00
Cherokee	1,244 89	May 1851	220,000 00
Illinois	2,123 65	August 1851	440,000 00
Philadelphia	1,238 10	October 1851	206,250 00
Total cost of ships			2,606,440 45

A tabular statement has been furnished, at the request of your committee, which is annexed to this report, showing the business of the line for six months, from *data* taken from the books of the concern. From this statement it appears that the total receipts, for the time named, amounted to $836,879 71, while the expenditures were $746,326 85; showing an excess of receipts over expenditures, of $90,552 86.

The Pacific branch, or rather continuation of this line, on the California and Oregon route, from Panama to Astoria, is the Aspinwall line, the contract for which was transferred, as before stated, by Arnold Harris, of Arkansas, the original contractor, to William H. Aspinwall and his associates, of the city of New York, on the 19th day of November, 1847.

The ships which at present compose this line, are as follows, the number of ships having been doubled in consequence of an increase

of the service, under a contract entered into under a law passed at the last session of Congress, changing the service from once to twice a month. The ships are:

The California,.....	1,058 tons,	commenced	October, 1848
The Oregon,.....	1,099 tons,	"	October, 1848
The Panama.....	1,087 tons,	"	Novem. 1848
The Tennessee.....	1,275 tons,	"	Novem. 1849
The Columbia,.....	778 tons,	"	Novem. 1850
The Golden Gate.....	2,068 tons,	"	Novem. 1851
Total.....	7,365 tons.		

The cost of the ships above mentioned, when placed at Panama, was as follows:

The California cost.....	$210,953 00
The Oregon.....	208,031 00
The Panama.....	225,707 00
The Tennessee.....	279,933 00
The Columbia.....	162,920 00
The Golden Gate.....	467,525 00
Total cost.....	$1,555,069 00

It will be seen from the above, that the total cost of the six vessels which have been accepted by the officers whose duty it was to supervise them and decide whether they had been built in accordance with the requisitions of the law and terms of the contract and whose decision is presumed, by your committee, to be conclusive in the premises, has been $1,555,069, and that their aggregate tonnage is 7,365 tons, instead of 5,200 tons, the amount agreed for. In addition to these ships, as your committee are informed, the company has in the Pacific seven steamers, with an aggregate tonnage of five thousand tons, not yet accepted by the government. The additional steamers are, and have been, always kept ready to replace the mail steamers in the event of detention. The cost of these additional steamers has been, it is stated, about two-thirds of that of the accepted steamers of the same class, say about $1,-636,712, making in all an outlay for steamships alone, of $2,-518,337.

It appears that the whole number of passengers, of all classes, transported by the Pacific mail ship company, the line in question, previously to December 31, 1851, from Panama northward, has been 17,016, and from Oregon southward, 13,332. The prices of passage have constantly fluctuated, but, on the date above named, the 31st of December, 1851, the average rates were, for the first cabin, two hundred and twenty-two dollars; second cabin, one hundred and sixty dollars, and steerage, one hundred and seven dollars. between Panama and San Francisco. In the early stages of emigration the prices were increased, in consequence of

the enormous prices of labor and supplies on that comparatively unsettled coast, but were subsequently reduced. At the commencement of the undertaking, the company incurred, of necessity, vast expenses in the selection of proper harbors for taking in provisions, water, coal, &c., and in the construction of *depots;* and even at present, coal and supplies of every description are sent to the Pacific via Cape Horn, a distance of from thirteen thousand to fifteen thousand miles.

The freights from Panama northward, have been small in amount, and confined to the lighter descriptions of articles sent by express, while the mails have been very large, amounting in some instances to one hundred and fifty bags, each, and, together with coal, water, &c., occupying all of the space not required for passengers. From California, the freights southward, have consisted of treasure, amounting, it is supposed, to the value of seventy millions of dollars, but it is extremely difficult to compute the worth accurately, as a large portion of the gold, &c. sent, has been in the possession of passengers, and the value does not appear in the manifests.

From the data furnished to your committee, of an authentic character, it appears that the average expense of one of the steamers per voyage, from Panama to San Francisco and back, is $68,442, independently of the insurance, which amounts to fifteen thousand dollars, upon each steamer, per annum, making an aggregate of ninety thousand dollars a year, for the six steamers. The entire mail pay for this route being $348,250 per annum, and the number of voyages being twenty-four, it follows that the compensation received by the company for carrying the mails is $14,510 for each voyage and, the expense per voyage being $68,442; if the receipts for mail carriage be deducted from the expense incurred, the balance against the company will be $53,932. It should be borne in mind, that the expenses here charged are for the voyage between Panama and San Francisco and consequently do not include those between San Francisco and the ports northward, in Oregon, where the travel is comparatively very small, and pays only an insignificant proportion of the expenses incurred in running the mail steamers. It should also be stated that the amount of expenses here set forth, applies to the Tennessee, Panama, Oregon and California, but not to the Golden Gate, which, being a much larger vessel, is navigated at a much greater cost. If the monthly insurance on the vessels engaged in making the voyage each month between the two *termini* of the route be included, the expense of each voyage will be increased, and the excess of cost, over compensation for mail service, will of course become greater.

It appears from an examination of the returns of the Post Office Department, that the amount paid for mail transportation throughout the whole of the California and Oregon line, that is to say,

from New York to Chagres, and from Panama to Astoria, has been $1,607,087 90, while the receipts from postage on the same route have been but $930,478 94; showing a balance against the department of $676,608 96. This deficiency, however, has not been caused by any fault whatever, on the part of the contractors, who have, as the committee think, performed their duty with the greatest zeal and correctness. The true cause of the deficiency is to be found, it is believed, in the law which, as it stands, does not provide that the agents of the department, or those of the contractors, shall have authority to make such examinations into the packages and parcels sent through individuals and express lines, as shall enable them to detect and pursue to punishment, the enormous frauds systematically practised every day upon the government.

JOURNAL OF INTERNAL IMPROVEMENT.

Railroad from St. Louis to New Orleans.

Missouri and Arkansas Railroad.—U. S. Survey, &c.

The Report of the Survey of a route for a railroad from St. Louis, Mo., to Red River, at Fulton, Ark., by Joshua Barney, U. S. Agent, has just made its appearance from the seat of Government.

Without speculating on the policy of the vast measure, which prompted this survey, the practical information contained in the report is of great value to the States of Missouri and Arkansas.

Our aim, in this article, will therefore be, merely to indicate the line, condense the substance, and represent the items of main importance in the survey, with a local view—with a view of promoting the cause of Internal Improvements in Missouri and Arkansas,—co-operating with Louisiana in forming a junction by railroad from St. Louis to New Orleans, although we prefer our original project —the cheapest and shortest route *via* Helena; the distance being reduced by the short line to 650 miles, which by the river is 1200 miles.

The report begins with a description of a futile effort to take a course from the city of St. Louis, bearing to the West of the Iron Mountain, with the intention after crossing the valley of the Maramac, to ascend the ridge between Big river and the Mississippi, and to pursue the same to the source of Big river, near the Iron Mountain, with the hope of discovering a favorable route along some stream having its source near the Mountain, flowing to the Big Black river. Difficulties of a very serious nature were met with on the crest of this ridge. It was exceeding tortuous; deep indentations of the ravines on each side frequently interlocked each

other; it was a succession of knobs and depressions. "Ascents and descents were encountered, over which grades of seventy, eighty and ninety feet per mile could only be attained by very expensive excavations and embankments."

The description of this unsuccessful effort terminates as follows:

"A route for a railroad on this ridge would be impracticable; for if it were possible to attain the elevation without the aid of inclined planes, it would be found useless to attempt to follow its sinuosities by a proper system of curvatures."

After the relinquishment of this first attempt, a proposition to discover a ridge route west of Big river, seems to have been considered, but was disposed of on the presumption that it was liable to the same objections that existed against a ridge route on the East of this river. Morell's survey, in 1840, for a railroad from St. Louis to the Iron Mountain, is alluded to as indicating similar objections, and as being exceedingly circuitous, the distance exceeding 110 miles.

We would here state that the Pacific Railroad Company have a party now engaged in the survey of a branch road to the Iron Mountain, on the ridge west of Big river; and we hear the prospect is much more flattering than was anticipated. This branch will bear fruits of incalculable importance to Franklin and Washington counties, as well as to the company, and we hope to see it completed as soon as it can possibly be done.

But to return to the report. After the attempts to discover the ridge routes were abandoned, it was thought that a route along the west bank of the Mississippi, and the valley of the Platten creek, afforded the greatest facilities, and presented the most direct line, as far as the neighborhood of the Iron Mountain, on the course proposed for the road.

Capt. Barney then states his reasons for the selection of this route somewhat at length, designates the southeast corner of the Arsenal grounds, as the point from which the survey commenced, and gives as the base line of his operations the high water mark of the Mississippi, in June, 1844, remarking that the total distance from St. Louis to the Iron Mountain, by this route, would not exceed 76 miles. He says:

"I accordingly commenced the survey of this route on the 6th of November 1849, at the southeast corner of the coping of the wall which encloses the U. S arsenal near St. Louis, and continued on it till the 26th of February, 1850, terminating in the valley of the St. Francois, at a point on the right bank of the stream, seventy-three miles and three hundred and sixty feet from the point of commencement, having made also numerous experimental offsets from the main route.

"I would further state, that in making a selection of this route for the then contemplated survey, I was influenced by a desire to pass, if possible, on the east of the Iron mountain, and thereby avoid crossing the additional summits which would necessarily be encountered on any route passing to the west of it. These summits, too, would, it was supposed, be found of much greater altitude, the further the route should be inclined to the west; and where the chain of Ozark mountains, and the range of hills thence towards the Iron mountain, traverse the country, they would be found to present obstacles which would be very difficult to surmount.

"The valleys of either the St. Francois, Big Black, or Current river, must necessarily be availed of, for a road in connexion with the route via the Mississippi and Platten creek. They all flow in a direction favorable for the contemplated road. The two latter, uniting in Arkansas near the northern boundary of the State, take a course thence to the junction with White river, nearly direct towards Little Rock.

"To arrive at the source of either of these two last-mentioned rivers, however, a considerable detour must be made, after gaining the valley of the St. Francois, which would not only increase the distance very materially, but would make it necessary to cross in one case one, and in the other two additional summits.

"The valley of the St. Francois appeared to present the most direct route; for though very serpentine in its course, it does not appear to differ, in this respect, from the valleys of Big Black or Current river. It is purposed, therefore, to continue the route down the valley of the St. Francois, until a favorable opportunity is afforded to cross to Big Black or White river, and thence by the most feasible route to the Arkansas above Little Rock.

"It was supposed, at the time I made the selection of this route for the survey, that no ridges or very elevated land would necessarily have to be crossed, in passing from the St. Francois to Big Black or White river; and I have been subsequently informed by several individuals who were well acquainted with that section of the country, that the land is low, and no obstacle whatever will present itself to the passage of the road.

"A branch road to the Iron mountain might diverge from this route, where it enters the valley of the St. Francois, and ascend, by the valley of one of its head branches, to the base of the mountain. The length of this branch road would be about fifteen miles, and the total distance from the mountain to St. Louis would not exceed seventy-six miles

"The developments made by this survey may be considered of great importance, in this point of view; as I believe no route from St. Louis to the valuable and inexhaustible masses of iron ore, and other minerals, in this section, has ever been contemplated, which would not exceed one hundred miles in length.

"The elevation of the water at the great freshet of the Mississippi of June, 1844, was ascertained from a mark made at the arsenal. This level has been assumed as the base line, and the surveys have been made with the view of locating the road and establishing the grade beyond the reach of similar freshets.

"The average fall of the Mississippi, from St. Louis to the mouth of Platten creek, will not vary much from six inches per mile; and this inclination may, I think, be safely assumed, in establishing the grade of the road, with reference to the effect of freshets. Observations were taken with the level at different points between the arsenal and the mouth of Platten creek, to marks made at the extreme height of the freshet of 1844, by which I was enabled to determine the fall.

"The stage of water in the river changed so often whilst the survey was being made along its banks, as to render it impracticable to arrive at any *certain* estimate of the fall at low water.

"Though this survey may be considered as entirely experimental, an effort has been made to approach sufficiently near a location to enable me to furnish an approximate estimate of the distances, gradients, curvatures, and probable cost of construction."

Having disposed of the preliminaries, we would here indicate the line of the route. It continues along the western bank of the Mississippi to the mouth of the Platten creek, to its source, crosses Terre Blanc creek a few miles above its junction with Big river, crosses the St. Francois river at a point 3 miles south of Farmington, St. Francois county, and 15 miles east of the Iron mountain, continuing along the valley of the St. Francois river, passes Greenville, in Wayne county, and extends along the river to a point 145 miles from St. Louis, "near a place known as the old Indian Ford, where the hills begin to recede from the river, at the termination of the highlands between the St. Francois and Black river."

Here the line leaves the valley of the St. Francois, and enters "what is termed the Swamp District, a section of country which has been very little explored, except by those who are in the habit of hunting." The line being continued for a distance of nearly 15 miles, passes "over some ground a little more elevated than the general level of the swamp, and known as the Ash Hills."

About 5 miles further south, it crosses Monockolet slough, thence deflecting S. W. pursues a straight course, 10 miles of which are in Missouri, and passes, along the ridge between the Cache and Black river, near Pocahontas.

As this portion of the route has generally been considered the most impassable on account of an apprehension that immense and deep lakes were lying in the way, we will quote more freely the words of the report, hereafter, on the subject of gradients and estimates.

Taking up the line of the route again, at a point on the ridge between the Cache and Black river, near Pocahontas, it extends on or near the middle of the ridge, in a southwesterly direction, without any material deflection, crosses White river just below the mouth of Black river, about ¾ of a mile from Jacksonport, continues its course in the same direction, "crosses Little Red river, at the farm of Americus Vanmeter, about two miles below Prospect Bluffs," "passes to the North of Col. Bracy's cotton plantation," "through the improvements of Alexander Crawford, John Griffins, Dr. Waters" and others, over "the road from the post of Arkansas to Fort Smith, on the farm of John M. Bell, Esq.," over "the main road from Little Rock to Searcy and Batesville, near the summit of one of the ridges on the farm of Taylor Whitley," over "the road leading from Little Rock to Memphis, on the farm of Redick Eason, about 14 miles by said road from Little Rock," and over the Arkansas river, "about 3 miles below Little Rock."

The line from the southern boundary of Missouri to Little Rock is so direct, and the obstacles in the way of a railroad route so trifling, that Capt. Barney thinks "it is more than probable that a straight line" from the boundary to "a depression in a spur of hills," a few miles north of Little Red river, "would pass over ground quite as favorable for the construction of a railroad as that over which the survey was made. This would make 100 miles in one right line."

Capt. Barney also states that "the route could be so altered as to run in a direct line" from the point above mentioned (where the spur of the high land was touched) to a suitable place for crossing the Arkansas river; which would be about 1¾ mile above the point at which the survey was crossed."

This would make 50 miles more in one right line.

The railroad would then be only 1¼ mile from Little Rock, and Little Rock would then be only 335 miles from St. Louis.

Resuming the line of the route, starting "from the end of an

offset, distant about 250 yards west of the residence of James Keates, Esq.," it ascends the valley of Fouche Bayou, crosses the dividing ridge between it and Hurricane creek, near the house of J. H. Crease, Esq., crosses the valley of Hurricane creek, "about ¼ of a mile from the point where the road from Little Rock to Washington and Fulton crosses it," thence passing near Benton, "about ½ mile to the right of the line," crosses Saline river "about 200 yards south of the ford on the Little Rock and Fulton road," passes out of the Saline valley, "near the house of Benj. Clardy, Esq., where it crosses the road from Camden to Little Rock," enters the valley of the Ouachita near the house of Commodore Perry Brewton, about 2 miles from Rockport, passes along this valley, and crosses Ouachita river near Arkadelphia, about 400 miles from St. Louis, and continues its course nearly direct to Fulton, making the whole distance from St. Louis 460 miles.

The line from Arkadelphia to Fulton crosses the road from Arkadelphia to Washington, near the house of widow Hurd, passes through Graham Manning's cotton plantation, crosses the Little Missouri about 200 yards below Elkin's Ferry, strikes the cotton plantation of Col. Thomas Williamson, where it crosses the road from Washington to Camden, crosses the road from Spring Hill to Washington. on the farm of Mr. Sitzer, over the plantation of Mr. Poindexter, and strikes Red river at the upper part of Fulton.

Capt. Barney indulges in very few speculations or descriptions about the fertility of the soil or the wealth of the mines along the line; he seems to have been mainly absorbed in the determination of the ascents, descents and deflections along the route. Passing by Carondelet, Jefferson Barracks, mouth of Maramac river, Herculaneum, close along the western bank of the Mississippi river, into and along the valley of Platten creek, and on to a point on the St. Francois river, 15 miles east of the Iron Mountain, he sums up the quality and products of the soil from St. Louis to the Iron Mountain in the following paragraph:

"The Bottom lands along the Mississippi and the valleys of the streams, over which this route extends, are covered with fine timber, consisting of varieties of oak, hickory, walnut, ash, sycamore, &c. But a small portion of the land has been cleared for cultivation, though the soil is exceedingly fertile, particularly on the flat lands of the valleys."

He states that the rock encountered along this route is generally limestone, that "the lead-bearing rock is found in places along the valley" of the west branch of Platten creek, and "great quantities of iron ore in boulders and broken fragments were seen in the bed of the creek and scattered about the surface of the ground." "The excavations necessary for the construction of a railroad through this region, therefore, may make important developments," and further states that "iron ore, of the same character as that found in the valley of the west branch, abounds in the valley of the middle fork of the Platten also; and beautiful specimens of crystalized quartz, encrusted with iron ore, were picked up on the hill-

sides and bottoms;" and adds that near the summit between Platten and Terre Blanc creeks "the ore was found in place, where large masses exist, combined with flint. It is supposed that the ridge or spur is here composed entirely of ore."

On the banks of the St. Francois river, about 15 miles east of the Iron Mountain, 3 south of Farmington and 64 from St.Louis, the first division of the route terminates.

But Capt. Barney remarks that, at a short distance below this point, "granite rock appears on this bank, where the lime-rock terminates; after which granite and sandstone, of very superior qualities for building, occur alternately. Sandstone cliffs occur in several places along the margin of the river, on the right bank, varying from 10 to 35 feet in height. On the left bank there appeared to be a continuous range of granite."

The second division of this route, 81½ miles in length, though only 60 in a direct line, passing within about 8 miles of the Pilot Knob and by Greenville, extends from one end to the other along the St. Francois river; the extra length occasioned by the necessities of following the sinuosities of the river.

Capt. Barney sums up the description of the country along this division in the following three paragraphs:

"But very little of the land in the valley of the St. Francois is cultivated. What has been, appears in patches of from ten to fifty acres, interspersed along the route at intervals varying from half a mile to six or eight miles. The soil is generally very fertile; but little wheat, or grain of any kind, except corn, is raised in the country. The attention of the farmer appears to be turned principally to raising stock, such as cattle, horses, hogs, and mules. I saw but few sheep on the route; and the country is also very thinly settled, remote from the river.

„The rock which has been mentioned in the description of the various sections of the second division, and which is found in abundance throughout the whole extent of the valley, is of an excellent quality for building purposes; the sandstone and granite which are found on the 1st section, and the granite which extends thence to the end of the 2d section, are of a very superior quality, and can be split out to any size and shape that might be required.

"The timber is generally of a very large size in the valley. On the 1st section there is a considerable quantity of pine intermixed with the other trees of the forest. The varieties of oak, hickory, ash, elm, &c., are found along the whole extent."

The third division of the route extends from Old Indian Ford on the St. Francois (30 miles above the southern boundary of Missouri and 145 from St. Louis,) 65 miles, passing Pocahontas on the ridge between Cache and Black river, and terminates about 10 miles below. Pocahontas is thereby brought within 200 miles of St. Louis.

The fourth division of the road, 62½ miles in length, extends to a point north of and near Glaize creek.

After alluding to some "hills in which both lime and granite rocks occur," near the Departee Bayou, some ponds, several sloughs and a few bottoms subject to inundation, Capt. Barney says:

"The general character of the 4th division is, in most respects similar to that of the 3d division; and the two embrace all that portion of the swamp district traversed by the line."

"The timber on this division is very much the same as that on the 3d division, though the cane which has been found at intervals along the line, from the 1st section on the 2d division, has gradually increased in size, and on the 4th section of this division become quite an impediment."

From the Old Indian Ford on the St. Francois to Jacksonport, on the White river, from August 16th to September 27th, 1850, no running water was found, except while the party was one week along Black river. "During the latter three weeks the only water which could be procured" was "scooped up out of holes and puddles found in the beds of drains, and where trees had been uprooted by the winds."

The 5th division extends to Little Rock, 64 miles, 336 miles from St. Louis.

Between Glaize creek and Little Red river the line touched spurs of hills which appeared to be one mass of sand rock for several miles, varying in altitude from 30 to 100 feet, though "the ground over which the route passes, is entirely free from stone of any kind."

Capt. Barney, after remarking that the country in this division is more diversified in its general character than that of the two preceding divisions, condenses his description of it, as follows:

"The country from one extreme to the other of this division, with very little exception, is covered with a large growth of forest trees, which consist of the varieties of oak, gum, ash, maple, hickory, elm, &c., with underbrush and green briar. In the swamps and bottom lands the cypress and willow oak predominate."

"Very little cultivated land was crossed by the route in this section. Improvements are sparse, and only exist in the immediate neighborhood of the larger streams, and at intervals along the principal roads."

"At the time the survey was made, there was no running water in any of the streams crossed in this division, except Little Red river. Many of the water courses were completely dried up, and in most of the others, water was only to be found in stagnant pools, in the beds of the stream."

"This division embraces a district of country in which the culture of cotton has been introduced and may be considered the principal staple commodity. The article produced is of fair quality."

The 6th division extends to the Ouachita river, near Arkadelphia, 65 miles, about 400 miles from St. Louis. The country here becomes still more varied with valleys of clay loam, bottoms subject to be inundated by freshets, uplands, hills and ridges composed principally of loose and compact gravel and sand, and several small streams. Rock is found only in few instances. But Capt. Barney says:

"The hills bordering the valley of Fouche bayou are very high, and those on the right of the stream appeared to be one mass of granite. There is an isolated hill within four miles of the Arkansas on the right bank of Fouche, called the Iron mountain, which rests on a base of granite of very superior quality for building, from which blocks of any dimensions can be obtained. This hill rises to an elevation of between 200 and 300 feet.

"The route passes through a few farms on the ascent from the Arkansas to the summit of J. H. Crease's, and through two or three in the section between that point and Saline river; but the extent of cultivated land is very inconsiderable.

"Besides the varieties of oak, hickory, ash, elm, &c., there is an inexhaustible quantity of very superior and large yellow-pine timber on the whole extent of the district embraced in this division."

The 7th division extends to the termination of the survey at Fulton on Red river, 60 miles, making the whole distance from St. Louis to Fulton 460 miles.

In regard to the features, soil, products, and improvements of the country, Capt. Barney says:

"The route, though very direct from the Ouachita to Fulton, crosses the numerous ridges, with very few exceptions, at very favorable points where there are depressions, from which small runs or drains flow into the branches on one or both sides of the ridge. This was in a great measure accidental, as it could not have been supposed that so many depressions of this nature could come in contact with a straight line for such an extent.

"The soil in the valleys and bottoms in this district consists of a light loam. In the valley of the west branch of the Deciper, on the right of the stream, about half a mile to the right of the line, on the plantation of Michael Bozman, numerous marine shells appear in the soil and on the sides of the hills; and in the bottom of a small run exists a large bed of marl.

"The hills are composed of compact and loose gravel and sand generally; though between the Ouachita and Little Missouri rivers a stratum of stiff blue and red clay appears about the base of the hills, and where the banks are washed by the waters of the creeks.

"The staple commodity of this district is cotton; but it is not cultivated to any great extent, as the improvements are very sparse."

As we will hereafter present the aggregate costs of construction of this railroad, the main items of information, with considerable detail, we will present here only a few of the most extraordinary lines of ascent, descent and deflexion along the route.

The road from St. Louis to Platten creek, 27 miles, is nearly level, inclining with the natural descent of the river 13,5 feet.

From Jefferson Barracks to the valley of the Maramac the course curves gradually, the radius seldom less than 1.800 feet.

From the mouth of Platten creek to St. Francois river near the Iron Mountain, 37 miles, the road ascends to 425 feet above the base line, though the highest point of the road is on the summit level between the waters of Big and St. Francois river.

This point is 550 feet.

The most difficult ascents, descents and gradients from the Mississippi to St. Francois river are:

1st. About 15 miles from the Mississippi the total ascent would be 155 feet, overcome by gradients as follows:

9,000	feet at	5.86	feet per mile,
9,000	"	11.73	"
12,000	"	12.10	"
15,000	"	21 12	"
6,600	"	34·00	"

2d. About 3 miles further (at the entrance of the proposed tunnel of 2,200 feet in length) the ascent will be 280 feet, and overcome by the following gradients:

9,000	feet at	39.6	feet per mile,
7,800	"	69.48	"
6,000	"	96.80	"

making the elevation attained, 435 feet.

This is the section in which mineral was found in the greatest abundance, and the report states that "it is supposed by the most

intelligent inhabitants of this section, that the ridge through which the tunnel is proposed to be made, abounds in galena and other valuable ore."

3d. From this point, Capt. Barney returned to the end of last section, and continued up a valley of the middle fork of Platten, over 2½ miles. He says: "The ascent on this section would be 230 feet; gradients 8,400 feet at 66 feet per mile; 5,100 feet at 129.-43 feet per mile."

4th. Continuing nearly 3 miles further at the summit of Platten and Terre Blanc creeks, the ascent is 105 feet, overcome by the following gradients:

3,300	feet at	72.00	per	mile.
3,000	"	8.00	"	
7,800	"	37.23	"	

Iron ore, and beautiful specimens of quartz encrusted with iron, were picked up along this section.

5th. The road here descends 165 feet to Terre Blanc creek, about 4 miles. The gradients 12,000 feet at 26.83 feet per mile; 7,500 at 73.21 feet per mile.

6th. The road ascends from Terre Blanc creek, passing the farm of Richard Paston, Esq., and the State road from St. Louis to Farmington, to the summit level between Three Rivers creek and Wolf creek, about 5 miles.

The ascents in this section would be 225 feet; the gradients—

11,400	feet at	23.15	feet per	mile.
6,000	"	44.00	"	
8,700	"	74.70		

attaining an elevation of 550 feet above the base line.

This point, the highest point of the whole road, is 30 miles from the Mississippi river, and 57 from St. Louis. From this point, with a comparatively gentle descent, ascent and descent, the road continues 7 miles and strikes the St. Francois river.

Capt. Barney concludes his report of gradients on this 1st division of the road with saying:

"By a skilful and judicious location, the work in many places may be made lighter, and the gradients less.

"The tunnel will not exceed 2,400 feet in lenght, which at an estimate of $20 per foot, will amount to $48,000.

"No other difficulties (excepting the bridge of the Maramac and the tunnel of the Platten ridge,) of an unusual nature occur on the whole route surveyed; and the road, thus far, can be graded at an expense much below the average cost of grading on railroads already constructed in this country.

"There will be a very small portion of the road straight; but the curves are not of radii to make them very objectionable; it being found necessary, but in a very few instances, to make the radius less than 1,800 feet, and never less than 1,0 0"

The second division of the road extends to Old Indian Ford, 81 miles, 145 miles from St. Louis. This division which would have been only 60 miles in length in a straight line, is made 21 miles

longer on account of the numerous curves in the river, which it was thought necessary to follow, mainly, throughout the whole length of the division.

The road descends, with a moderate inclination, interrupted by only 5 ascents, from 425 feet above, to 80 feet below the base line.

It will be unnecessary to repeat here any of the gradients of this division, not one of them being so steep as several are in the first division, of which a full account is given above.

The descent in the stream was found to be 508 feet from the point where it was first crossed to Indian Ford, and, therefore, to exceed the main descent of the road only 3 feet.

This division will be more expensive than the other, because 1st, it is ¼ longer; 2d, it crosses the river right and left several times; 3d, bold cliffs of granite and trap rock project in the way of the road.

About 75 miles from St. Louis the road passes through "*The Narrows of the St. Francois.*" At a point, 15 miles further down, "the river flows through another narrow pass confined on each side by high, steep hills and precipices of trap rock, which in places rise perpendicularly from the margin of the stream to an altitude of 150 feet." "The river makes numerous abrupt turns, making it necessary to cross it no less than 9 times" within as many miles.

100 miles from St. Louis, at the farm of Mr. Crauns, the hills "appear isolated mountains." Here advantage was taken of a depression along the bank, the valley of the St. Francois was left, and that of Big creek entered; but, although "4 or 5 miles and as many bridges are saved by this detour" which extends 8 miles, Capt. Barney reports:

"A portion of the valley of Big creek, traversed by the route, is of the same character as that of the valley of the St. Francois described above; the hills rising on each side, in a succession of perpendicular cliffs of trap-rock, to an elevation of six or seven hundred feet."

Along the section passing Greenville, 120 miles from St. Louis, "the valley is more extensive, and the greater portion of the route would pass over bottom lands," and continues the same with slight variations at singular spots to the end of the division, these variations being mainly at an acute angle pointing northwest, called "The Whirlpool," and "The Neck," 600 yards wide, "the distance around which by the river, would be about 3 miles." These phenomena are about 5 miles apart, and within 10 miles of Old Indian Ford, the end of the 2d division.

From Old Indian Ford, the road runs south 20 miles nearly on a level, crossing "Ash Hills" and Monockolet slough, then running towards the Southwest 10 miles further, on the same level, it crosses Big Swan lake, "in which there was no water," and the boundary line between Missouri and Arkansas, at nearly the same point. From this point it continues southwest to Little Rock, 160

miles in a line almost uniformly straight; 90 miles of this portion of the road, is on nearly the same level with the last 30 miles in Missouri. So that from Old Indian Ford, this road descends gently (with only five extremely slight ascents) 120 miles to Glaize creek, about 8 miles S. W. of Jacksonport. While indicating the line of the route through the "undiscovered country," we proposed to make several extracts from the report of the 3d division terminating near Pocahontas. Here they are:

"We thence (from Ash Hills) continued S. 7 W., about three miles, crossing the Monockolet slough, which heads near the St. Francois, and extends, in nearly a southwest direction, to Black river. The bed of this slough might be availed of to a great extent in cutting a canal from the St. Francois to Black river, which could be done at a very little expense."

"The left or southeast bank of the slough is much more elevated than the general level of the swamp, and is never overflowed by the inundations of the river, as the greater part of the surface of the country appears to be in times of freshets. After crossing the Monockolet slough, the route continues for a distance of ten miles, in a southwest direction on ground not subject to be overflowed." "The line crosses Big Swan Lake, which was represented to be one of the sources of Cache river. At the time the line was run, (August 31st, 1850) there was no water in the lake, and the bed of it was covered with a thick growth of swamp weeds and grass; the bottom of it a deep quagmire."

"The beds of Mud creek, Blue Spring Slough, at two stations, and the Monockolet Slough will require bridges of 30, 20, 60, and 75 feet spans respectively; and seven small runs or drains of inconsiderable extent will require culverts. It may be found expedient, too, in crossing several of the cypress sloughs, (through which, however, there did not appear any evidences of the water having at any time formed a current,) to construct the road on piles, so as to allow the water to drain off, where there is an inclination from one side of the road to the other. With these exceptions the road may be constructed by forming an embankment, averaging say not more than four feet in height for the whole length of the division."

From the information above afforded, and from much more that follows, it is clearly manifest, that for the distance of 65 miles along the line surveyed from Old Indian Ford on the St. Francois in Missouri, to Pocahontas, in Arkansas, a railroad can be built at a very cheap rate. We now know that, where great obstacles were apprehended, only small ones exist.

We are particularly pleased to remark here, by way of digression, that Capt. Barney's report confirms the statement of Prof. Forshey, of La., published in our May No., in regard to the features of the ground in this *terra incognita;* also of Dr. King of Mo., published in our June No., on the same subject; also of an

Ex-member of Congress, published in our July No.; each of the above contributors advocating the project proposed originally, in our February No.—*Railroad from St. Louis to New Orleans.* As this "undiscovered country" has been a subject of groundless misrepresentations, and as Capt. Barney is both diffuse and explicit in his fair representation of its appearance, we cannot refrain from quoting a few more consecutive paragraphs from his report of this section of 65 miles.

"Though the surface of the country through this district is gently undulating, in places there is a gradual inclination to the south. The total descent in the division of sixty-five miles is sixty feet, on which the gradients of the road will in no instance extend ten feet per mile. There will be three slight ascents to avoid cutting where the general surface of the ground is level, but these ascents are but short, and do not exceed five feet per mile.

"The soil is generally a clay-loam, resting on a bed of blue clay, through which the water in the rainy seasons of the year does not percolate rapidly; and as there are sections, for miles in extent, where the elevations on the surface do not vary more than a few inches, the water remains on the surface and saturates the soil, so that the district becomes impassable. Hence, I imagine, it has acquired the name of the swamp district. The line of survey crosses very few morasses or grounds of a swampy nature, and these are of very inconsiderable extent, requiring nothing more than the usual method of embankment to cross them.

"In locating a road with a view of making it as straight as possible, it is probable that the route might pass over the beds of some few small ponds, as they are interspersed over parts of the northern portion of this division: but the embankment in these cases would be comparatively light.

"No stone, whatever, is found on the route, and that which may be required in the construction of a road mu t necessarily be brought from the bank of Black river.

"The timber is generally of very large size, consisting of the varieties of oak, hickory, ash, elm, sweet gum and maple. In the sloughs and low swampy grounds, there is a mixed growth of cypress and cupola gum. The underbrush is very thick, except on the ranges of flat glade lands, where there is generally a growth of post and willow oak, and hickory of a small size."

The 4th division of this road, 62 miles, ending near Glaize creek, is on an almost uniform level until near its termination. The table of estimates, which follows, makes this division the cheapest one in the whole route.

The 5th division, 64 miles, extending to Little Rock, is somewhat more varied in its gradients than either of the two preceding, though the cost of its construction is estimated to be lower than that of the 3d, and higher than that of the 4th.

The 6th division, 64 miles, extending to the Ouachita, and the 7th division, 60 miles, extending to Red river at Fulton, are varied by numerous ascents and descents though with few deflexions. The ascents and descents in the 6th and 7th divisions resemble those in the 1st and 2d divisions though they are overcome at less expense.

The total fall below the base line at Little Rock is 160 feet, at the Ouachita 213, and at Fulton 169 feet.

The estimates of the cost of construction of the several divisions are as follows:

Estimates of 1st division, 64 miles, from the city of St. Louis to the St. Francois river:

Total cost of clearing and grubbing		$44,685
Do.	excavation and embankment	563,370
Do.	masonry	97,721
Do.	bridging	67,220
Total cost for grading and bridging		772,996

Estimates of 2d division, 81 miles, along the valley of the St. Francois river to Old Indian Ford:

Total cost for clearing and grubbing		$56,040
Do.	excavation and embankment	680,857
Do.	masonry	114,449
Do.	bridging	206,150
Total cost for grading and bridging		1,057,496

Estimates of 3d division, 65 miles, to a point 10 miles below Pocahontas:

Total cost for clearing and grading		$62,400
Do.	excavation and embankment	322,130
Do.	masonry	18,480
Do.	bridging	12,350
Total cost for grading and bridging		415.360

Estimates of 4th division, 62 miles, to Glaize creek:

Total cost for clearing and grubbing		$56,340
Do.	excavation and embankment	182,389
Do.	masonry	28,888
Do.	bridging	92,550
Total cost for grading and bridging		360,167

Estimates of 5th division, 64 miles, to Little Rock:

Total cost for clearing and grubbing		$49,590
Do.	excavation and embankment	223,357
Do.	masonry	39,733
Do.	bridging	61,700
Total cost for grading and bridging		374,380

Estimates of 6th division, 64 miles, to the Ouachita river:

Total cost of clearing and grubbing		$54,450
Do.	excavation and embankment	340,718
Do.	masonry	105,427
Do.	bridging	193,570
Total cost for grading and bridging		694,165

Estimates of 7th division, 60 miles, to Fulton:

Total cost for	clearing and grubbing.....	$51,690
Do.	excavation and embankment....	454,800
Do.	masonry.....	110,695
Do.	bridging.....	69,500
Total cost for grading and bridging.....		686,685

Aggregate cost of construction:

No. of division.	Description of work.	Amount.
1	Clear'g & grubb'g, grad'g, mas. & bridg'g	$772,996
2	Do. do. do. do.	1,057,496
3	Do. do. do. do.	415,360
4	Do. do. do. do.	360,167
5	Do. do. do. do.	374,380
6	Do. do. do. do.	694,165
7	Do. do. do. do.	686,685
Cost of constr., with iron rail (65 ℔ p. yard) with necess. sidlings & switches—460¾ miles, $7.500 p. m.		3,455,625
Cost of engineer department and contingencies.....		500,000
		8,316,874

As the cost of construction of depots. station and engine-houses, workshops, &c., must depend upon the nature and extent of the business on the road, no provision has been made for them in the above estimate.

The calculations have been made for a road-bed 26 feet wide.

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Thus, we have presented a plain view of the chief points in the report of this survey. We have endeavored to unfold all the material facts in the case, equally plainly, to the plainest man and to the most skilful.

We trust this practical information may be turned to immediate account, and result in astonishing utility.

We hope that all who feel an interest in the cheapest and shortest *Railroad from St. Louis to New Orleans*, only 650 miles, *via* Helena and the *New Orleans, Jackson and Great Northern Railroad*, will take advantage of this survey of 175 miles in that direct route from St. Louis to the southern boundary of Missouri;—that all who feel an interest in a *Railroad from St. Louis*

to New Orleans via Little Rock in Arkansas, and Monroe and Alexandria, in Louisiana, and the *New Orleans, Opelousas & Great Western Railroad*, will make use of this survey of 336 miles on that route;—that all who feel an interest in the internal improvement of Missouri and Arkansas,—in their mountains of iron and lead,—in their valleys of corn and cotton,—will catch at this survey of 460 miles,—that all men within their borders will be firmly united in favor of the *Missouri & Arkansas Railroad*;—that the whole North, South and West may be invoked to rally to the aid of these rich, poor States; so that when the "Bill" arrives at its goal in Congress, 10 miles of land, on each side, and in favor of this road, may be granted by an overwhelming majority; and finally, we hope that the whole road may be put under contract before next spring.

PACIFIC RAILROAD.—First Locomotive West of the Mississippi.

The "Pacific No. 3," arrived at St. Louis about the 20th ult. We learn from the officers of the Pacific Railroad Company, that the weight of this engine is 22 tons; cost at the manufactory, Taunton, Mass., $7,600; total charges on transportation, including insurance, $1,400.—The "St. Louis, No. 1," manufactured at Patterson, N. J., arrived about the 15th inst. (Sept., 1852); weight 24 tons, cost $8,500, at the manufactory; cost of transportation, including insurance, about $1,500.—The "Maramac No. 2"—the largest and most elegant engine—manufactured by Rogers, Ketchum & Grosvenor, at Patterson, N. J., costing $8,600 there, is now on its way here.

The company have also received two passenger cars, manufactured at Troy, N. Y. Each of these cars affords accomodation for about sixty persons, and costs $2,300, at Troy. Cost of transportation &c. above $300 each. We are informed that the company have received about 3,200 tons of iron rails, purchased in London, which has cost about $45 per ton delivered at the Depot in St. Louis.

The cost of rails, delivered at New Orleans, exclusive of import duty, *per* contract, is $32,25 *per* ton. By the contract 4400 tons of rails were to have been delivered at New Orleans, on the 15th of Sept., 1852. 1200 tons of rails are therefore now prob-

ably *in transitu* from New Orleans to St. Louis. The rails weigh 60 pounds per lineal yard. 95 tons extend one mile, excluding occasional side tracks.

The company will hereafter build their own cars, having engaged one of the best car makers in the United States.

On the 20th of September the company commenced laying the rails on the tracks, and will continue the work till forty miles are finished.

In the 1st number of the next (9th) volume, we hope to publish a valuable article on the subject of the *Pacific Railroad.*

ALTON AND SPRINGFIELD RAILROAD COMPLETE.

This road was opened for travel on the 9th instant, on which day the first locomotive and train arrived at Springfield. Scarcely any railroad in the United States, of equal length—72 miles—has been built in so short a time. In respect to enterprise and indomitable energy, Alton stands unrivaled among the towns on the Mississippi if not in the Union. We trust her citizens will be fully compensated for their public spirit.

BELLEVILLE AND ILLINOISTOWN RAILROAD.

We learn that on the 25th ult. (August, 1852) Messrs. Page and Bacon, Bankers of this city, subscribed for the entire stock in this road, and entered into a contract to have the same in successful operation by the first day of August, 1853.

HANNIBAL AND ST. JOSEPH RAILROAD.

The President and Directors of the Hannibal and St. Joseph Railroad Company, at the recent meeting in this city, have contracted with Mr. Duff, a gentleman representing a Boston Company to build the entire road, depots, locomotives, cars and every thing complete; the work will be commenced at both ends of the route as the locations are made, probably in November, and to be finished in four years.—(*St. Joseph Adventure.*)

We see it stated in the "Brunswicker" that the work is let at $23,000 per mile. We are not informed whether or not this includes the equipments.

LITERARY DEPARTMENT.

Conspiracy of Pontiac.

History of the Conspiracy of Pontiac and the War of the North American Tribes against the English Colonies after the Conquest of Canada. By FRANCIS PARKMAN, Boston, 1851.

REVIEW BY MANN BUTLER.

[Conclusion.]

With these capacities and resentments burning in the breasts of his countrymen, Pontiac assumed the initiative in the confederacy, against the British garrison established in his country. He sent embassadors to the tribes on the "Ohio and its tributaries; they passed northward to the region of the upper lakes, and the wild borders of the river Ottawa, in Canada; and far southward towards the mouth of the Mississippi." P. 166. "Bearing with them the war belt of wampum broad and long as the importance of the message demanded; and the tomahawk stained red, in token of war; they went from camp to camp, and from village to village. The message was heard everywhere with approbation, the belt was accepted, the hatchet snatched up, and the assembled chiefs stood pledged to take part in the war. The blow was to be struck in the month of May following, to be indicated by the changes of the moon The tribes were to rise together, each destroying the English garrison in its neighborhood; and then, with a general rush, the whole were to turn against the settlements of the frontier." These confederate tribes comprehended the Algonquins, the Wyandots, and several tribes of the lower Mississippi, and the Senecas, the only tribe of the six nations, who joined in this league. Now came council after council, till the plan of war was fully adopted. Its first feature was to surprise the garrison of Detroit, and murder its commanding officer, Major Gladwyn. Pontiac was to demand a council, so common between the Indians and the whites, upon all matters of importance. The Indian party were to carry weapons beneath their blankets, and their guns were shortened for this purpose. When Pontiac should address the commandant in the council, he was to make a certain signal, upon which the chiefs were to raise the war whoop, rush upon the officers present, and strike them down. The other Indians, waiting all night at the gate, or loitering among the houses, on hearing the yells and firing within the building, were to assail the astonished and half-armed soldiers; and thus Detroit would fall an easy prey. P. 186. Such was the conspiracy part of this great Indian combination. "It was eagerly adopted." Preliminary to this bold and daring attempt, an effort scarcely less bold was made, to reconnoiter the enemy's stronghold. On the 1st of May, 1763, Pontiac with forty or fifty of his followers came to the fort-gate, and desired to enter

for the purpose of dancing the calumet-dance before the British commander and his officers. They were admitted, and while the greater part of the party were busied in the wild dance, surrounded by the officers and men of the garrison, another portion of the Indians were examining the defences of the place, to report their condition to their great chief. This visit excited no suspicion in the minds of the British; nothing was more usual in the intercourse of the native barbarians with their foreign visitors. The month rolled on in the usual routine of a frontier fortress; while the nations of the forest were all on the alert, making ready for a great and desperate blow, which should annihilate their foreign masters. In the midst of this security, on the one part, and deep laid schemes of vengeance on the other, the fatal day advanced, when late in the evening of the 6th of May, 1763, a girl of the Ojibwa tribe, of more than ordinary Indian beauty, (called Catherine by the English) who had attracted the love of Gladwyn, "repaired to his quarters bringing with her a pair of elk-skin mocassins ornamented with porcupine work, which he had requested her to make." There was something sad and downcast about her, and after leaving Gladwyn, she was observed "still lingering at the street corner, though the hour for closing the gates had nearly come. At length she attracted the notice of Gladwyn himself; and calling her to him, he pressed her to declare, what was weighing upon her mind. Still she remained for a long time silent, and it was only after much urgency, and many promises not to betray her, that she revealed her momentous secret. To-morrow, she said, Pontiac will come to the fort with sixty of his chiefs Each will be armed with a gun cut short, and hidden under his blanket. Pontiac will demand to hold a council; and after he has delivered his speech, he will offer a peace-belt of wampum holding it in a reversed position. The chiefs will spring up, and fire upon the officers, and the Indians in the street will fall upon the garrison. Every Englishman will be killed, but not the scalp of a single Frenchman will be touched."

Such are the interesting particulars derived by the author from the traditional account from the lips of an Indian interpreter, Henry Conner, communicated to H. R. Schoolcraft, and confirmed by Carver in his Travels. Could a vulcano burn so silently or breathe violence more fell ! But before we proceed with the thrilling circumstances of this profound, well laid and diabolical conspiracy, it may be interesting to know something more about this object of Indian hate and fear, which had been planted by La Motte Cadillac for the French government, as early as 1701. P. 188.

Detroit at this time (1763) contained 2500 inhabitants, surrounded by villages of Wyandots, Pottawattamies and Ottawas, at short distances. In the centre of the settlement stood the Fort on the margin of the river Detroit, and contained about a hundred houses, compactly built together, and surrounded by a palisade

about twenty feet high. At each corner was a wooden bastion and blockhouse built over each gateway. The houses were small, chiefly built of wood, and roofed with bark or a thatch of straw. The streets were also extremely narrow, though a wide passage way, known as the *chemin du ronde*, surrounded the town between the houses and the palisade." P. 190. "The garrison consisted of a hundred and twenty soldiers, with about forty fur traders and *engagés;* but the latter, as well as the peaceful Canadian inhabitants of the place, could be little trusted, in the event of an Indian outbreak. Two small armed schooners, the *Beaver* and the *Gladwyn*, lay anchored in the stream, and several light pieces of artillery were mounted in the bastions." Such was the only hope and stronghold of the British, on this remote frontier, with no hope of reinforcement nearer than Fort Niagara and Montreal, in the heart of powerful and exasperated savages amounting, according to various accounts, from 600 to 2000 warriors. Let us see how civilized man can deal with all the arts and force of barbarian warfare under circumstances, apparently so unequal for the former, so favorable to the latter. Gladwyn, the British commandant, was now convinced of his danger, tho' he had lent a deaf ear to other and grave warnings. "Every preparation was made to meet the sudden emergency. Half the garrison were ordered under arms, and all the officers prepared to spend the night upon the ramparts." "It rained all day," writes a chronicler of the times," cleared up towards evening, and there was a very fair sunset." From sunset till dawn, an anxious watch was kept from the slender palisades of Detroit. The soldiers were still ignorant of the danger, and the sentinels did not know why their numbers were doubled, or why, with such unwonted vigilance, their officers visited their posts. Again and again, Gladwyn mounted his wooden ramparts, and looked forth in the gloom. There seemed nothing but repose and peace in the soft, moist air of the warm spring evening, with the piping of frogs along the river bank, just roused from their torpor by the genial influence of May. But at intervals, as the night wind swept across the bastion, it bore sounds of fearful portent to the ear; the sullen booming of the Indian drum, and the wild chorus of quavering yells, as the warriors around their distant camp fires, danced the war dance, in preparation for the morrow's work." P. 196. The whole passage ushering in the great final act of the dread drama, is most beautifully dramatic itself; but I must condense these charms of composition into a more brief, tho' less comely narrative.

Many Indians, with dangerous confidence were admitted, in the course of the next morning, into the fort; "they were wrapped in their blankets, stalking about, and casting malignant, furtive glances towards the palisades. At ten o'clock, the great war chief with his treacherous followers reached the fort, and the gateway was thronged with their savage faces. All were wrapped to the

throat in colored blankets. Some were with hawk, eagle, or raven plumes; others had shaved their heads, leaving only the fluttering scalp lock on the crown; while others, again, wore their long, black hair flowing loosely at their backs, or wildly hanging about their brows, like a lion's mane. Their bold, yet crafty features, their cheeks besmeared with ochre and vermillion, white lead and soot, their keen, deep set eyes, gleaming in their sockets like those of rattlesnakes, gave them an aspect grim, uncouth and horrible." "For the most part, they were tall, strong men, and all had a gait and bearing of peculiar stateliness." Could a spectator of this Indian file have given a more graphic and lively account! Yet it is a picture true to the life of an Indian procession, in full costume.

As Pontiac entered the fort-gate, he was struck with the sight of ranks of soldiers, and hedges of glittering steel. The swarthy, half wild *engagés* of the fur traders, armed to the teeth, stood in groups, at the street corners, and the measured tap of a drum fell ominously on the ear. The chief was startled, and a deep ejaculation half escaped from his breast; yet, with the composure, at the peril of life, characteristic of his race, he strode forward with his followers, to the council house. Here they found Gladwyn with several of his officers seated to receive him, every man armed to the teeth. "Why," demanded Pontiac, "do I see so many of my father's young men standing in the street with their guns?" The British officer replied, that they were under arms "for the sake of exercise and discipline." Reluctantly and tardily the chiefs took their seats on the mats prepared for them; and after some pause, Pontiac rose to speak, professing in usual Indian phrase, his attachment to the English, and "that he had come to smoke the pipe of peace, and brighten the chain of friendship." "Once, it is said, he raised the wampum belt, as if about to give the signal of attack, but at that instant, Gladwyn signed slightly with his hand. The sudden clash of arms sounded from the passage without, and a drum rolling the charge filled the council room with its stunning din." Pontiac, surprised by the calm self-collectedness of the British, soon resumed his seat, in amazement and perplexity. Gladwyn made a brief reply. He assured the chiefs, that friendship and protection should be extended towards them as long as they continued to deserve them; but threatened ample vengeance for the first act of aggression. P. 200. The council then broke up, and Pontiac told the officers that he would return in a few days with his squaws and children; for he wished that they should all shake hands with their fathers, the English.

The gates of the fort, which had been closed during the conference, were again flung open; and the baffled savages were suffered to depart, rejoiced, no doubt, to breathe the free air of the open fields. In the words of Gladwyn in a letter to Sir J. Amherst: "However, in about half an hour, after they saw that their designs

were discovered, they sat down, and Pontiac made a speech, which I answered calmly, without intimating my suspicion of their intentions; and after receiving some trifling presents, they went away to their camp." P. 201.

Yet this baffled attempt did not discourage Pontiac from trying another, to ascertain, what he felt uncertain about, whether it was the ignorance, or the cowardice of the British commander, which had let him and his warriors safe out of the lion's den; an escape, which Gen. Amherst hoped they had not made. Early in the morning of the 8th of May, Pontiac again made his appearance at the fort-gate, "with three of his chiefs, bearing in his hand the sacred calumet or pipe of peace, the bowl carved in stone, and the stem adorned with feathers. Offering it to the commandant, he addressed him and his officers to the following effect: "My fathers, evil birds have sung lies in your ear. We stand before you as friends of the English. We love them as our brothers, and to prove our love, we have come this day to smoke the pipe of peace." At his departure he presented the pipe "to Major *Campbell*, second in command, as a further pledge of his sincerity."

On the 9th of May, the wily chief made a further and better concerted plan to surprise the garrison. Indians from the four tribes thronged about the fort, and Pontiac again made application to enter the fort, which was permitted to him alone, but he was told, "that the crowd he had brought with him must remain outside." "Pontiac rejoined that he wished all his warriors to enjoy the fragrance of the friendly calumet." Gladwyn, thrown off his guard by those repeated attempts to surprise and outwit him, declared that "he would have none of his rabble in the fort." And now, the conspiracy was over, and open, savage warfare in all its fiendish orgies broke forth.

War, in the wildest form which civilized and unsavage society can imperfectly give to its horrors, is ever the most demoniac exhibition of human passions. Man slaughtering man, with all the ferocity which high skill and intrepidity can give, still arrogates the dread prerogative of the Most High, to determine life or death. But while gallantry, humanity, and honor all combine by their gentleness to alleviate the calamities of war between civilized nations; while the pardonable enthusiasm of cooperating with great bodies of men breathing the same feelings amidst "all the pomp and circumstance of glorious war," may gild these fearful conflicts of human beings. But in war with savage foes, which one of these alleviations is to be found? The march is through the gloom, the silence, and solitude of the forest, the enemy almost always under covert, and ready to spring with unsparing fury upon his victim. The garrison duty is yet harder, and more deterring; situated on the frontiers, surrounded by wilderness, beset by the same wily and ferocious foe, the men are constantly hovering on death by sur-

prise or starvation from destitution. This, then, was the situation of Detroit, on the 9th of May, 1763.

But before the result and sequel of this *one* act, the conspiracy, are succinctly sketched, the reader may be pleased to contrast a similar adventure between the late General Harrison and Tecumseh. It happened at a council held in 1810 with that chief at Vincennes, after some conference between this chief and the General about a treaty negotiated by the latter for a cession of Indian lands, and the announcement by the Indian orator "of resistance to every cession of land unless made by all the tribes, who, he contended, formed but one nation." (Drake's Life of Tecumseh, p. 125.) While the interpreter was explaining the General's speech in reply, Tecumseh in the midst of the translation, sprung from the ground to his feet, and spoke with violent gestures, declaring that all the Governor had said was false, and that he, and the seventeen fires (*i. e.* States,) had cheated and imposed upon the Indians. "At that moment the followers of Tecumseh seized their tomahawks and warclubs, and sprung on their feet, their eyes turned on the Governor." The readiness of the Governor and his friends, together with the arrival of the guard, prevented any further outrage. "Governor Harrison then told Tecumseh, that he was a bad man, and that he would hold no further communication with him; that, as he had come to Vincennes, under the protection of a council fire, he might return in safety; but that he must immediately leave the village. Here the council terminated."

There is a remarkable coincidence between the policy of Pontiac and Tecumseh. Both stretched every nerve of influence and power known by the red man, to withstand the fatal progress of the white farmer; both distinguished themselves in their patriotic efforts; and however fatal they might have been to our own race, this should not prevent our doing justice to those devoted heroes, devoted to the rescue of their own doomed race from overthrow, by a hostile one.

It would be intruding too much on the plan of this Journal, to detail all the subsequent conflicts between the Indians and the British, about Detroit alone; some times on the Lake, and at other times by land, most spiritedly related by our author. These are intermingled with sketches of scenery and manners graphic to a degree of excellence rarely equalled. As a specimen of landscape painting, this extract is selected.

"Standing on the water bastion of Detroit, the landscape that presented itself, might well remain impressed through life upon the memory. The river about half a mile wide, almost washes the foot of the stockade and either bank was lined with the white Canadian cottages. The joyous sparkling of the bright blue water; the green luxuriance of the woods; the white dwellings looking out from the foliage; and in the distance the Indian wigwams cur-

ling their smoke against the sky,—all were mingled in one great scene of wild and rural beauty." P. 191.

Again, describing the sunset before the conspiracy broke forth:

"Perhaps it was such an one, as even now, when all else is changed, may still be seen at times from the eastern shore of the Detroit. A canopy of clouds is spread across the sky, drawn up from the horizon like a curtain, as if to reveal the glory of the West, where lies a transparent sea of liquid amber immeasurably deep. The sun has set; the last glimpse of his burning disk has vanished behind the forest; but where he sank, the sky glows like a conflagration, and still, from his retreat, he bathes heaven and earth with celestial coloring. The edges of the cloudy curtain are resplendent with gold, and its dark blue drapery is touched with blood-red stains by the floods of fiery radiance. The forest and the shores melt together in rich and shadowy purple, and the waters reflect the splendor of the heavens." P. 195.

A glowing picture of a gorgeous sunset, whose fidelity to nature every one, familiar with the skies of the West, will confess. The writer's own recollections of eastern scenery do not now enable him to contrast it with that of our western region. There are few of the most indifferent observers of nature, who will not recognize this vivid picture of a western sunset.

The description of the season known as the Indian summer strikes the writer as equally beautiful.

"A light haze rests on the morning landscape, and the *many colored* woods seem wrapped in the thin drapery of a veil; when the air is mild and calm, as that of early June, and at evening the sun goes down amid a warm voluptuous beauty that may well outrival the softest tints of Italy. But through all the still and breathless afternoon, the leaves have fallen fast in the woods, like flakes of snow, and everything betokens that the last melancholy change is at hand. And in truth, on the morrow, the sky is overspread with cold and stormy clouds, and a raw, piercing wind blows angrily from the Northeast. The shivering sentinel quickens his step along the rampart, and the half naked Indian folds his tattered blanket close around him. The shriveled leaves are blown from the trees, and soon the gusts are whistling and howling amid gray, naked twigs and mossy branches. Here and there, indeed the beach tree, as the wind sweeps among its rigid boughs, shakes the pale assemblage of crisp and rustling leaves. The pines and firs with their rough tops of dark evergreen, bend and moan in the wind, and the crow caws sullenly as struggling against the gusts, he flaps his black wings above the denuded woods." P. 405.

Such are some of the beautiful features interspersed with the grave narrative of the terrible and the heroic actions, which enter into this history. A rapid summary must bring this review to a close.

After sweeping, and in most instances, massacring the British garrisons at Green Bay, Michillimackinac, Sandusky, Le Boeuf, and Presq' Isle, these forts were burnt to the ground. Fort Pitt was sorely beleaguered until relieved by the battle so well fought at Bushy Run, by Gen. Bouquet, about twenty-five miles from the fort. But while Detroit and Fort Pitt were saved from the clutches of the Indians, which threatened to re-possess the continent, the frontiers of Virginia, New York and Pennsylvania were ravaged with the most frightful destruction.

These terrible calamities of Indian warfare may well, and with gratitude, be read by the present generation enjoying the fruits of their fathers' bravery and hardihood exerted against them.

At length the news of the peace of Paris, in 1763, was thoroughly credited by the Indians, their capacities for continued warfare were exhausted. What fear left unfinished, the policy and the management of Sir William Johnson and Col. Croghan completed, by their address and shrewdness. Even Pontiac, the master spirit of this most fearful combination of the savages of North America, was prevailed upon to attend a grand council at Oswego, in New York, in July, 1766. These hostilities were closed by a general peace.

After the termination of this memorable war, Pontiac does not re-appear until April, 1769. He visited St. Ange, at St. Louis, the commandant of the province, and an old military acquaintance of the Indian chief. After leaving the fort of St. Louis, he proceeded to the house where the late Pierre Chouteau was an inmate, and who recollected the interview most vividly to the end of his long life. The chief remained two or three days at this city, when hearing of an Indian gathering, at Cahokia, on the Illinois side of the Mississippi, he told St. Ange, "that he would go over, and see what was going forward." St. Ange tried to dissuade; "but Pontiac persisted, boasting that he was a match for the English, and had no fear for his life." He embarked in a canoe with some of his followers. At Cahokia, he was invited by his old friends, the Creoles of the village, to a feast, at which all parties drank deep. "When the carousal was over, Pontiac strode down the village street, to the woods, where he was heard to sing the medicine songs, in whose magic power he trusted as the warrant of success in all his undertakings."

While thus unmanned by liquor, an Indian of the Kaskaskia tribe, was bribed by an English trader, of the name of Williamson, jealous of the chief's influence over the French, and revengeful on account of his hostility to the British, basely to assassinate the great chief. The murderous bribe is said to have been a barrel of liquor, and the promise of a further reward. "When Pontiac entered the forest, the assassin stole close upon his track, and watching his moment, glided behind him, and buried a tomahawk in his brain."

Thus basely fell the greatest native chief of the Indian race known to our countrymen; and fearfully was his murder revenged by the bloody and relentless extermination of the Illinois tribes who had furnished and abetted the murderer.

In the meanwhile the body of the murdered chief lay upon the spot where he had fallen, until St. Ange, mindful of former friendship, sent to claim the body, and buried it with warlike honors near his fort of St. Louis.

An account of the Fort of St. Louis shall close this too protracted review.

It consisted of an irregular square, with projecting angles; it was built of stone, and went by the name of *Le Bastion.* This fort was situated precisely at the present intersection of Cherry street with Broadway, on the continuation of Third street, and lay east of the latter. There was a barbacan, or outerbuilding lying in a northeastern direction from the Bastion close to the fort-gate, and commanding the open space which stretched between the Bastion and a stone tower or Half Moon, which stood on the river bank. The actual inhabited village of St. Louis was then bounded on the north by a line running east from the fort to the river, and west by the present Third street. Not that the village was confined to the in-lots of the inhabited town, "for the commons, outlots, and common fields were," in the language of an eminent jurist, of St. Louis, "as much a part of a French or Spanish village as the Plaza."

There was another fort at the intersection of the present Walnut and Fourth streets, to which an ancient cemetery was attached. Of this, the writer was informed by Mr. Cozzens.

Which of these forts had the honor of receiving the remains of the great war-chief of the Ottawas, and the most distinguished chieftain ever known among the savages of North America, is now, perhaps, impossible to ascertain. No traditions can now be gathered here respecting this great light of the red men.

ARCTIC SEARCHING EXPEDITION.—*A Journal of a Boat-Voyage through Rupert's Land and the Arctic Sea, in search of the Discovery ships under command of Sir John Franklin, with an Appendix on the Physical Geography of North America. By Sir* JOHN RICHARDSON, *C. B., F. R. S. &c. &c.* New York, Harper and Brothers.

Review by Dr. Prout.

In this age of bookmaking it is really a pleasure to meet with a book of travels which will repay one for its perusal. Some time ago Capt. Zebulon Pike introduced a fashion which seems daily to be gaining ground, which was to give a journal of each day's travel, all the unimportant objects which paint themselves on the retina, and all

the trifling incidents which occur in a regular mode of wayfaring. This mere personal narrative of what I and Kit Carson did, or some other man Friday achieved in passing through a savage country without being scalped, may serve to give us some idea of the prowess and woodmanlike sagacity of the sons of the forest and the difficulties which often beset their paths, but will afford a meagre sum of knowledge on subjects which interest an intelligent and enquiring mind.—So far as the general fund of human knowledge is concerned, it would have been better, had such writers curbed their restless spirits, and not labored so diligently, bodily and mentally, in the production of these stale inanities.

The same remark applies with equal force to another class of tourists becoming more numerous every day; a class which by the caprices or the accidents of fortune has acquired the means of traveling amidst the classic ruins of a past age without taste to appreciate their beauties, philosophy to derive instruction from their teachings, or historical knowledge sufficient to speculate on the destinies of the descendants of those who reared them in their gorgeousness and grandeur. Mere pedants in learning, fops in literature, and Quixotes from the land of gossip,—they gabble about riding dromedaries, visiting harems, the probable length of the bashaw's tail, or of subjects of kindred and equal moment, while subjects of graver importance are seldom touched for fear of imparting dulness to their narratives, or probably more from the fear of having their shallowness detected if their balderdash penciling, and their sickly sentimentality should fall into the hands of a sensible and sober-minded reader, seeking some gleanings of wheat from the abundance of chaff which characterizes this form of literature. Riley's narrative with all its hairbreadth and wonderful escapes, its painful and sympathy awakening details, though now known to be mainly a work of fiction, is worth a whole bookstore of such productions. For it has at least the merit of awakening a lively interest in the fate of the narrator, and of gratifying, to the fullest extent, our deep yearnings for the marvelous.

The work before us is one of a different order from any of these. It is of the pen of one deeply imbued with the love of science, whose acquaintance with the institutions and civil regulations of society enables him to appreciate its wants, and define what is most important to be known in an age of progress and discovery. The habits of close observation, the cautious generalization, and the sober spirit of philosophizing, which pervades this work, together with the truthfulness of the writer in his delineations of nature, the ease and gracefulness of his style, are all calculated to impart to it an interest rarely possessed by such works, if we except from the denunciation the works of the prince of travellers, the author of Cosmos and the Aspects of Nature. It is not only a book of travels, but it is a book of facts, ascertained by patient observation, and of principles established by well defined illustrations and cautious inductions. The geologist, the botanist, the zoologist, the ethnologist, the philologist, the geographer, and others, will find in it a rich field, from which they may derive both pleasure and instruction.

The fate of Sir John Franklin is a subject which fills with fearful interest the public mind, both in Europe and this country. It is well

known that from the time of Columbus a nearer route to Cathay with its pearls and gold has been a leading object with many of the maritime powers of the old world. The British government, the last to be impressed with the advantages of discovering a nearer passage to the Indies, dispatched Sir John Franklin in May, 1845, to Cape Walker on Barrow's Straits, in west longitude 98°, with instructions to neglect all northward openings, and to use every effort to find a passage to the Pacific, to the southward or westward of that point. In the event of his not reaching Behring's Straits, he was to enter Wellington Straits, in the summer. Setting out with the Erebus and Terror, two stanchly built vessels, he was required to transmit intelligence of his proceedings to the Admiralty by the natives or the Hudson Bay Company, whenever an opportunity should offer, and also after passing the 65th Meridian, to throw over board daily a copper cylinder containing a paper stating the ships' position.

On the 4th of July, 1845, the Expedition reached Whale Fish Island, south of Disco, in Davis' Straits, where the transport, accompanying the Expedition, was cleared and sent back to England, and conveyed the last letters that have been received from the officers and crew of these ill-fated vessels. These ships were seen for the last time by Capt. Dannet, a commander of a whaling vessel, on the 26th of July, in latitude 74° 48′ N., longitude 66° 13′ W., moored to an iceberg, waiting for a favorable opportunity of entering or rounding the middle ice, and crossing to Lancaster Sound, distant in a direct westerly line 220 geographical miles.

No intelligence of the Expedition having been received for some eighteen months after its last appearance at this point, serious fears began to be entertained for its safety. Various suggestions were offered as to the probable course taken by Sir John Franklin, and many were the explanations proffered as to his silence or the total absence of all information in regard to his progress. After much discussion on the subject, the Lords Commissioners of the Admiralty concluded to fit out three separate expeditions to go in search of him and to relieve him and his exhausted crews if possible from their prison home among the floating icebergs and impenetrable barriers of the Arctic Sea.

One of these expeditions, under the command of Sir James Ross, was required to pursue as near as possible the same course pursued by Sir John Franklin, and to find out by sign posts and other marks left the direction of his voyage after he reached Lancaster Sound. Another expedition was sent by the way of Behring's Straits, and the third, which forms the subject of the present notice, was fitted out under the command of Sir John Richardson, which was required to reach the Arctic ocean by an overland route, from Montreal to the mouth of the McKenzie River, and then to explore the coast, from thence north of Rupert's Land to the mouth of the Copper Mine river inclusive of Wollaston and Victoria Lands. The Expedition was further required to make deposits of stores and provisions at different points on the shores of the Arctic, so as to meet the wants of the detached parties under the direction of Sir James Ross.

Leaving out the details connected with this expedition from the arrival of Dr. Richardson at Saut Ste. Marie, on the 29th April, to his reaching the Cumberland House on the Saskatchewan, on the 9th of

June, 1848, we will refer to a few of the facts observed, and subjects discussed, with the view of showing the general tenor of this interesting work.

The geological features, and the natural history of Lake Superior, having been so well defined by Professor Agassiz, we will omit the remarks of our author though highly interesting, and limit ourselves to his observations on the country intervening between Lakes Superior and Winipeg.

"The ascent to the summit of the water-shed between Lakes Superior and Winipeg, by the Kamenistikwoya river, is made by about forty portages, in which the whole or part of a canoe's lading is carried on the men's shoulders; and a greater number occur in the descent to the Winipeg. The summit of the water-shed is an uneven, swampy, granitic country, so much intersected in every direction by lakes that the water surface considerably exceeds that of the dry land. Its mean elevation above Lake Superior is about 800 feet, and the granite knolls and sand-banks, which vary its surface, do not rise more than 150 or 200 feet beyond that general level, though their altitude above the river valleys which surround them is occasionally greater, giving the district a hilly aspect. The highest of these eminences does not overtop Thunder Mountain and some other basalt-capped promontories on Lake Superior, and had not the silurian strata, which, judging by the patches which remain, once covered the gneiss and granitic rocks nearly to their summits been removed, the country would have been almost level, and would have formed part of the rolling eastern slope of the continent, above whose plain the highest of the hills on Lake Superior scarcely rises. The summit of this water-shed of the St. Lawrence basin, commencing toward the Labrador coast, runs south 52° west, or about southwest half-west, at the distance of rather more than two hundred miles from the water course, until it comes opposite to that elbow of the line of the great lakes which Lake Erie forms; it then takes a north 51° west course, or about northwest half-west, toward the northeast end of Lake Winipeg, and onward from thence in the same direction to Coronation Gulf of the Arctic sea. The angle at which the two arms of this extensive water-shed (but no where mountain ridge) meet between Lakes Huron and Ontario is within half a point of a right one, and the character of the surface is every where the same, bearing, in the ramifications and conjunctions of its narrow valleys filled with water, no distant resemblance to the fiords of the Norway coast. Such a preponderance of fresh water coupled with the tardy melting of the ice in spring, makes a late summer, and augments the severity of the climate beyond that which is due to the northern position of the district."

This water shed of the St. Lawrence, and Hudson's Bay, extending from Lake Huron to Coronation Gulf, is an important feature in the physical structure of this continent. It forms however but a part of a more extensive and uniform system of water sheds, which mark in nearly parallel lines the general surface of the country west of the Rocky Mountains.

The North American continent may be considered as a great table land, having its western more elevated than its eastern border, from the

preponderance of the expansive power which elevated the Rocky Mountain chain from the depths of the ocean. All the surface east of this range is a more or less gradual slope characterized by extensive table lands. The Alleghanies are evidently based upon a table land; and the water shed between the tributaries of the Missouri and Saskatchawan, when extended towards the east, becomes more and more expanded into a great table land which supports the basins of the great Lakes, emptying themselves into the St. Lawrence. The line of elevation extending from Lake Huron to Coronation Gulf is but a part of this same table land, and the water shed of the St. Lawrence extending to Labrador may be considered as its extreme eastern limit. It seems as if some expansive power had been employed to elevate the continent from Lake Huron to Coronation Gulf in a line nearly parallel with the Rocky Mountain range. This line of granitic, metamorphic and plutonic rocks, which form the western shores of all the larger Lakes between Lake Superior and the Arctic ocean, affords abundant evidence of volcanic agency.

Between the Rocky Mountain chain and this almost parallel line of elevation we have a series of water sheds which correspond, in general direction, with the Alleghany range, which is evidently only a north-eastern branch of the great backbone of the continent, the Rocky Mountain chain. Considering the Alleghany range as the first and most southern water shed, we will endeavor to trace the others in regular succession. The second in the series is the Ozark range. If that portion of this chain, which has been denuded, could be restored across Illinois and Lake Michigan, it would form a continuous connexion from the Rocky Mountain chain, through the water shed of the St. Lawrence with the Eastern coast of Labrador in a line nearly parallel with the Alleghanies. The third water shed is formed by the Black Hills, which pursue a nearly northeast course and are gradually blended with the southern border of the table land, which separates the waters of the Missouri from those of the Saskatchawan. The great table land north of the head waters of the Missouri in its tendency to slope to the north and to the east, is marked with a fourth water shed, which is that which separates the waters of the Saskatchawan from those of the Peace and Athabaska rivers. This line of elevation commencing at Mt. Brown runs in a nearly northeast direction to Methy Portage (the highest in the route from Lake Superior to the mouth of the Mackenzie), and from thence between Lake Wollaston and Black Lake to join the elevated plutonic line from Lake Huron to Coronation Gulf.

A fifth water shed is that which separates the waters of the Peace and Athabaska rivers from the affluents of the Great Slave Lake. The sixth and last is the line of elevation which divides the waters of Great Slave Lake from those flowing into Bear Lake. Between Bear Lake and the Arctic ocean the spurs of the Rocky Mountain pursue the same general direction to the northeast, and become low ranges of hills rendered shorter in extent by the general contour of the continent.

We see here six prominent lines in which an elevatory force has been exercised, so as in some measure to preserve a parallelism which is truly remarkakle. We can only give a summary of our views on

this subject here, as our space is too limited to admit of more detail, But to return to our author. The following extract will explain how the Lakes which dot the surface of almost every district in this upper region, are undergoing changes which must ultimately convert them into dry land.

"The eastern coast-line of Lake Winipeg is, in general, swampy, with granite knolls rising through the soil, but not to such a height as to render the scenery hilly. The pine-forest skirts the shore at the distance of two or three miles, covering gently-rising lands, and the breadth of continuous lake-surface seems to be in process of diminution, in the following way. A bank of sand is first drifted up, in the line of a chain of rocks which may happen to lie across the mouth of an inlet or deep bay. Carices, balsam-poplars, and willows speedily take root therein, and the basin which lies behind, cut off from the parent lake, is gradually converted into a marsh by the luxuriant growth of aquatic plants. The sweet gale† next appears on its borders, and drift-wood, much of it rotten and comminuted, is thrown up on the exterior bank, together with some roots and stems of larger trees. The first spring storm covers these with sand, and, in a few weeks, the vigourous vegetation of a short but active summer binds the whole together by a net-work of the roots of bents and willows. Quantities of drift-sand pass before the high winds into the swamp behind, and, weighing down the flags and willow-branches, prepare a fit soil for succeeding crops. During the winter of this climate, all remains fixed as the summer left it, and as the next season is far advanced before the bank thaws, little of it washes back into the water, but, on the contrary, every gale blowing from the lake brings a fresh supply of sand from the shoals which are continually forming along the shore. The floods raised by melted snows cut narrow channels through the frozen beach, by which the ponds behind are drained of their superfluous waters. As the soil gradually acquires depth, the balsam-poplars and aspens overpower the willows, which, however, continue to form a line of demarkation between the lake and the encroaching forest."

In the following observations, the limit to the geographical distribution of some forms of vegetation, is defined page 50:

"With respect to the forests: The white or sweet cedar (*Cupressus thyoides*) disappears on the south side of Rainy Lake, within the American boundary line. The Weymouth pine, various maples, cockspur thorns, and the fern-leaved Comptonia, reach the southern slope of the Winipeg basin. Oaks extend to the island and narrows of that lake. The elm, ash, arbor vitæ and ash-leaved maple terminate on the banks of the Saskatchewan. The "wild rice," or *Folle avoine** of the voyagers and traders, grows abundantly in the district between Lakes Superior and Winipeg.

* *Zizania aquatica* L., or *Hydropyrum esculentum* of Link.

† *Myrica Gale*, (Sweet Willow.)

This grain resembles rice in its qualities, but has a sweeter taste. Though small, it swells much in cooking, and is nourishing, but its black husk renders it uninviting in its natural state. In favorable seasons it affords sustenance to a populous tribe of Indians, but the supply is uncertain, depending greatly on the height of the waters. In harvest time the natives row their canoes among the grass, and, bending its ears over the gunwale, thresh out the grain, which separates readily. They then lay it by for use in neatly-woven rush baskets. This grass finds its northern limit on Lake Winipeg, and it is common in the western waters of the more northern of the United States; but how far south it extends, I have not been able to learn. Strache, in his "Historie of Traveille in Virginia," speaks of a "graine called *Nattowine*, which groweth as bents do in meadowes. The seeds are not much unlike rice, though much smaller; these they use for a deyntie bread, buttered with deere's suet." (p. 118.) It is possible that he may refer to a smaller species (*H. fluitans*) of the same genus, which is known to abound in Georgia; but the seed of that could scarcely be collected in sufficient quantity. The hop-plant (*Humulus lupulus*) reaches the south end of Lake Winipeg, and, according to Mr. Simpson, yields flowers plentifully in the Red River colony. We observed it in the autumn of 1849, growing luxuriantly on the banks of the Kamenistikwoya, and connecting the lower branches of the trees with elegant festoons of fragrant flowers. An opinion prevailed among the traders that Lord Selkirk introduced it into this neighborhood when he took possession of the Northwest Company's post of Fort William, upward of thirty years ago; but the plant is indigenous to America, and grows abundantly in the Raton Pass, lying on the 37th parallel, at the height of eight thousand feet above the sea, as well as in many localities of the northern States. Throughout the canoe-route from Lake Superior to Lake Winipeg, no district shows such fertility as the banks of Rainy River. In autumn, especially, the various maples, oaks, sumachs, ampelopsis, cornel bushes, and other trees and shrubs whose leaves before they fall assume glowing tints of orange and red, render the woodland views equal, if not superior, to the finest that I have seen elsewhere on the American continent, from Florida northward. Nor are showy asters *helianthi*, *lophanti*, *gentianeæ*, *physostegiæ*, *irides*, and many other gay flowers, wanting to complete the adornment of its banks."

On the 14th of June Dr. Richardson and his party left the Cumberland House for the mouth of the Mackenzie, by the way of the Minnisippi or Churchill river, and on the 17th they reached the Second Ridge Portage, on Ridge river. This is said to be the highest point to which the sturgeon ascends, on this side of the Rocky Mountains. Two species are found here, the *Accipenser Rupertianus* and the *Nameyu* of the Crees, which had not been described. The first is small, weighing generally from 15 to 20 pounds, the latter often weighs as much as 90 pounds.

Heron or Moon Lake, Pelican and Wood Lakes, abound in many varieties of fish, and are visited by large bodies of pelicans, white-headed eagles (Haliæetus albicilla). The eagle is found throughout Rupert's Land, and the pelican ranges to 60°–61° North. The black-bellied tern ranges to the upper Mackenzie, and the Cayenne tern is met with as far as the Arctic Circle. The Grus Canadensis, or brown crane, and the Grus Americana, which our author supposes contrary to the view of Audubon, to be a distinct species, are found here in great numbers. The first is found as far as the Arctic, the other is limited to the latitude of Slave Lake. For much interesting information on the habits of these birds we must refer the reader to the work itself.

On the 24th of June, our voyager arrived at *Isle a la crosse.* The country traversed from Cumberland House to this point, was very uniform in the character of its rocks; granite in mass, and boulders, sienite, green-stone, hornblendic slates, and other pyrogenous rocks, were found both on the Ridge and Churchill rivers, throughout this entire extent. Beaver river flows over limestone strata, on the south of Isle a la crosse; and a line running from the northern shore of Lake Winipeg to the southern shore of Isle a la crosse, or north 58° west, is considered by our author as representing the line of junction of the limestone with the primitive rocks of this district of country.

Isle a la crosse is estimated as being 1300 feet above the ocean, and Carlton House, on the Saskatchewan, as 1100. This would give a descent of a little more than 2 feet to the mile to the eastern slope from these points to Hudson's Bay: the distance from the former being 525 geographical miles, in a direct line and from the latter 625 miles.

On ascending the Methy river to the Rapid of the Tombs, the northern limit of the red or pitch pine, was attained; only a few trees were found here intermixed with the black spruce. Methy Portage which separates the waters flowing into Hudson's Bay from those flowing into the Arctic by the Mackenzie river, is estimated as being 1540 feet above Clearwater river, which flows into the Mackenzie. This source of the Mackenzie is therefore only about 900 feet above the level of its mouth on the Arctic ocean.

Dr. Richardson arrived at Clear-water on the 6th of July, after being detained some six days longer than he anticipated, in crossing Methy Portage. The sand on the N. E. flank of the portage is 600 feet deep. The sandstones and limestones in the bed and on the banks of this stream he regards as belonging to the Erie division of the New-York system, or the silurian. He describes the Clear-water valley as being unsurpassed by any which he had seen in America for beauty. He says: "The view from the Cockscomb of Methy Portage extends 30 or 40 miles, and discloses, in beautiful perspective, a succession of steep, well-wooded ridges descending on each side from the lofty brows of the valley to the borders of the clear stream which meanders along the bottom. Cliffs of light-colored sand occasionally show themselves, and near the water, limestone rocks are almost every where discoverable. The *Pinus Banksiana* occupies most of the dry sandy levels; the white spruce, balsam fir, larch, poplar, and birch, are also abundant; and, among the shrubs, the *Amelanchier*, several cherries, the silver-foliaged *Eleagnus argentea*, and rusty-leaved *Hippophae Canadensis* are the most conspicuous." (To be continued.)

POEMS BY EDWARD STAGG.—St. Louis, Mo.: Published by Keith & Woods. New York: A. S. Barnes & Co. 1852.

To find a master-piece of Art is difficult; to find fault is easy. Depreciation is more fashionable than appreciation. A disposition to discover

'Sermons in stones and good in everything'

is uncommon. This disposition is as good as it is rare, and it breathes throughout these poems. It is one of the most civilizing elements in human nature, and an alleviator of its sorrows. It accumulates joy in a glad heart, and relieves the grief of the mourner. It takes the sting from death, and leads the way to victory over the grave.

We have not space to review this work at present.

The poems are short, and the subjects treated, are generally taken from ordinary life. The rhythm of kindly feeling flowing along the lines is finer than the rhyme or the rhythm of the words. The ideas are better than the expressions.

The improvement of the heart more than the amusement of the fancy, the instruction of the mind more than the allurement of the ear, the elevation of the moral sentiments more than the description of outward forms seem to have been the aim of the author.

We present a few extracts, and let them speak for themselves:

TO MINNIE S——.

* * * * * * * *

There will be much to taint thy heart
Around thee, but, O! that "good part,"
Like Mary, take;
Then shall thy days flow smooth and sweet,
Thy hours, with incense on their feet,
Shall lead to Bliss above!

FOLLOW ON!

Follow where thy duties call thee!
Follow! with unflinching tread!
Let not fear of man appal thee:
None but God thou e'er should'st dread!
Onward!
Onward!
None but God thou e'er should'st dread!

Dare to do what conscience tells thee
Is the right, the nobler part!
Scout the thought that e'er compels thee!
Drive the Traitor from thy heart!
Onward!
Onward!
Drive the Traitor from thy heart!

Bare thy bosom to the battle!
Let the storm beat on thy breast!
What though shafts around thee rattle?
Follow! trust to God the rest!
Onward!
Onward!
Follow! trust to God the rest!

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August, 1851.

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Trunks repaired in the best manner. Call and examine for yourselves before buying elsewhere, as I am determined to sell as low as any house in the trade, at all risks, No. 42 North Second street [Westside,] between Chestnut and Pine streets, May, 1851.

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L. G. JEGFERS.
A. B. LATHROP & Co.

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J. BLATTNER, Mathematical and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 58 North Second street, between Pine and Olive, St. Louis, Mo., manufactures, and has always on hand: Surveyor's Compasses, Levelling Instruments, Theodolite Pocket Compasses, S y-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, hydrometers for acids and salts, Magic Lanterns, Electrical Machines, &c., also, Surgical and Dental Instruments; Pocket, Dissecting, Cupping and self-injecting cases; Taylor's Shears, all sizes; Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; large Scales and Weights for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flaks, Game Bags, &c. ☞All the above Instruments repaired at short notice in the best manner.

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WM. M. HARLOW, proprietor of the St. Louis Furniture Store, manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, will o w ware, &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

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JOHN S. WATSON, (late of Wilgus & Watson) No. 54* 40' Pine street, between Second and Third, next door above the old stand of Wilgus & Watson, house, steamboat, sign and ornamental painter, grainer, glazier, whitener and paper hanger; also, dealer in all the latest styles of French and American paper hangings. He keeps constantly on hand and ready for sale mixed paints of all colors, oils, varnishes, Japan, turpentine, white lead, putty, and a large and superior assortment of French and American window glass, which will be cut to any size to suit customers.

Particular attention paid to estimating on houses or steamboats. November.

WOLF & ENGERT, importers and dealers in Paper Hangings, Colors and Fancy Papers, No. 49 South Second street, between Elm and Myrtle, St. Louis, Mo. Constantly on hand, all kinds of oil and water colors, paper-hangings, chimney screens, tester pieces, window shades, marble, marroquin, Gold and Silver paper, painters' and Dutch gold bronze, lead pencils, paint boxes, paint brushes, drawing paper, &c. April, 1850.

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PERSONS wishing to obtain transcripts of records in New Madrid county, can procure them without delay by addressing the undersigned. And to avoid the inconvenience of remitting small sums, the records will be directed to George Pegrim & Co., St. Louis, who will deliver the same upon the payment of the fees. WM. MOSELEY,
Recorder of New Madrid Co., Mo.
March, 1851.

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FRUIT TREES AND SHRUBBERY, for sale by the undersigned, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment. The Nursery and Gardens are open at all times (Sundays excepted) for the reception of visitors. Horticulturists and amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty-five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. Their prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondelet, will meet with prompt attention.

JOHN SIGERSON & BROTHERS.

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CHARLES CORKERY,

Notary Public and Commissioner of Deeds and Depositions for all the North-western States, Missouri included. October, 18 1.

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MR. P. A. PIGNERO begs to inform the public, and the Ladies more particularly, that he has taken the store, corner of Fine & Fourth streets, under Planters' House, to which he will remove his establishment for False Hair, of every variety, and for Pomatums, Combs, &c. &c. Mr. Pignero has recently received from the East a large and select lot of Wigs, Cues, and False Hair, manufactured in every style and to suit every taste. He begs for an examination of his stock. Private rooms for ladies and gentlemen, entirely seperate, and fitted up, where consultation on diseases of the hair can be had free of charge.

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